PROAG
Morris

# OPERATOR'S MANUAL

## 881 & 1400
## Hay Hiker

K24345P-08A

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**Notes**

# Section 1: Safety

## Section Contents

**SAFETY-ALERT SYMBOL**

**Watch for this symbol. It identifies potential hazards to health or personal safety. It means:**

ATTENTION - BE ALERT.
Your Safety is involved.

**Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.**

## Signal Words

The words **DANGER, WARNING** or **CAUTION** are used with the safety alert symbol. Learn to recognize the safety alerts, and follow the recommended precautions and safe practices.

**Three words are used in conjunction with the safety-alert symbol:**

**DANGER** — **Indicates an imminently hazardous situation that, if not avoided, will result in DEATH OR SERIOUS INJURY.**

**WARNING** — **Indicates a potentially hazardous situation that, if not avoided, could result in DEATH OR SERIOUS INJURY.**

**CAUTION** — **Indicates a potentially hazardous situation that, if not avoided, may result in MINOR OR MODERATE INJURY.**

Replace any **DANGER, WARNING, CAUTION** or instructional decal that is not readable or is missing. The location and part number of these decals is identified later in this section of the manual.

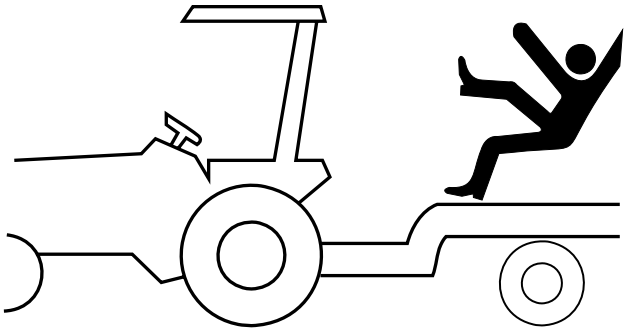
The words **Important** and **Note** are not related to personal safety but are used to give additional information and tips for operating or servicing this equipment.

**IMPORTANT:** Identifies special instructions or procedures which, if not strictly observed could result in damage to, or destruction of the machine, process or its surroundings.

**NOTE:** Indicates points of particular interest for more efficient and convenient repair or operation.

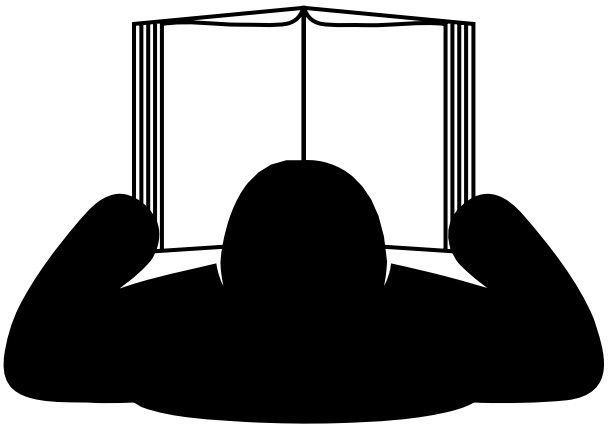
## General Operation

- **DO NOT RIDE!!** Do not allow riders on the implement when in motion.
- Do not allow extra riders in the tractor unless an instructor seat and seat belt are available.
- **Check behind** when backing up.
- **Reduce speed** when working in hilly terrain.
- Never allow anyone within the immediate area when operating machinery.
- **Keep all shields in place**, replace them if removed for service work.
- Always lock bale fork in raised position.



## Tractor Operation

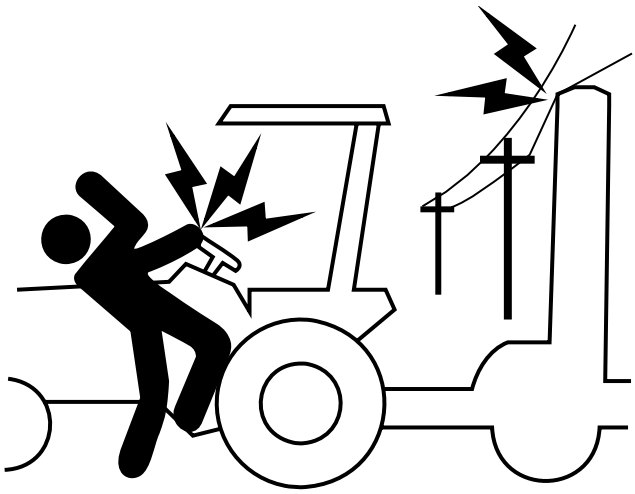
- Be aware of the correct tractor operating procedures, when working with implements.
- Review tractor operator's manual.
- Secure hitch pin with a retainer and lock drawbar in centre position.



## Transporting

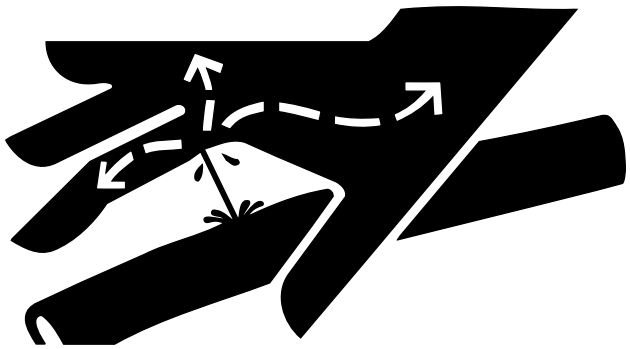
- **Be aware** of the height, length and width of implement. Make turns carefully and be aware of obstacles and overhead electrical lines.
- Always travel at a safe speed. Do Not Exceed 20 M.P.H. (32 kph).
- **REDUCE SPEED** with a load. **Do Not** Exceed a speed of 10 M.P.H. (16 kph).

  Use an agricultural tractor that is large enough with sufficient braking capacity so that the weight of the loaded equipment towed does not exceed 1.5 times the weight of the tractor.
- The slow moving vehicle (SMV) emblem and reflectors must be secured and be visible on the machine for transport.
- Use flashing amber warning lights, turn signals and SMV emblems when on public roads.
- Do not transport in poor visibility.
- Avoid soft surfaces, the additional wing weight on the wheels could cause the machine to sink.
- Check that bale fork is fully raised and transport lock is secure.



## Hydraulics

- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- Use cardboard or wood to detect leaks - never your hands.
- Double check that all is clear before operating hydraulics.
- **Never** remove hydraulic hoses or ends with machine elevated. Relieve hydraulic pressure before disconnecting hydraulic hoses or ends.
- Maintain proper hydraulic fluid levels.
- Keep all connectors clean for positive connections.
- Ensure all fittings and hoses are in good condition.
- Do not stand under wings.



## Maintenance

- **Shut tractor engine off** before making any adjustments or lubricating the machine.
- **Block** machine securely to prevent any movement during servicing.
- Wear close fitting clothing and appropriate personal protective equipment for the job.
- **Do not** search for high pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.
- **To prevent personal injury**, do not walk within radius of raised bale fork or bed. Always ensure bale fork is locked in place.
- Do not modify the machine.

**Caution**

**Keep service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.**

## Storage

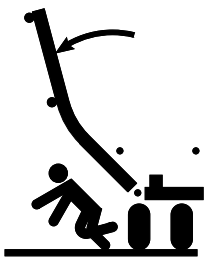
- Store implement away from areas of main activity.
- Level implement and block up securely to relieve pressure on jack.
- Do not allow children to play on or around stored implement.

## Safety Signs

**DANGER**

OVERHEAD FALLING HAZARD

- Bale fork may fall rapidly causing bodily injury.
- Always stay clear of bale fork when being raised, lowered, or in elevated position.
- Always install transport lock when machine is left unattended with bale fork in elevated position.
- When transporting machine or servicing bale fork always install transport lock.
- Ensure cylinder is completely filled with hydraulic fluid to avoid unexpected movement.



**WARNING**

**This implement may exceed maximum road regulations. Before you transport this implement contact a local agency regarding road regulations concerning maximum allowable implement dimensions.**

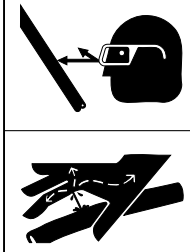
C31201

**WARNING**

**Keep off while machine is moving or mechanism is running.**

D13705

**WARNING**



**HIGH-PRESSURE FLUID HAZARD**

**To prevent serious injury or death:**

- **Relieve pressure on hydraulic system before servicing or disconnecting hoses.**
- **Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.**
- **Keep all components in good repair.**

C-4262

**WARNING**

**Personal injury or property damage may result from loss of control.**

- **Always use large enough tractor with sufficient braking capacity.**
  - **Weight of fully loaded implement should not be more than 1.5 times weight of tractor.**
- **Maximum recommended towing speed is 20 mph (32 km/h).**
- **Use flashing amber warning lights and SMV emblem when on public roads, except where prohibited by law.**
- **Refer to tractor and implement Operator's Manuals for weights and further information.**

N24301

**CAUTION**

**STAND CLEAR WHILE RAISING OR LOWERING MACHINE.**

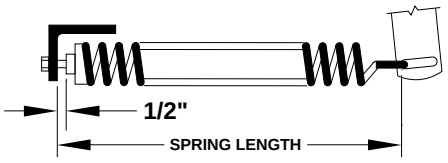
S-4785

**CAUTION**

HELP PREVENT ACCIDENTS. KEEP SHIELD IN PLACE. STOP MACHINE TO GREASE OR ADJUST. KEEP HANDS AWAY FROM MOVING PARTS

K5486

**IMPORTANT**




**CHAIN TENSIONER SPRING**

**TIGHTEN TENSIONER TO OBTAIN 1/2" DIMENSION AS SHOWN.**

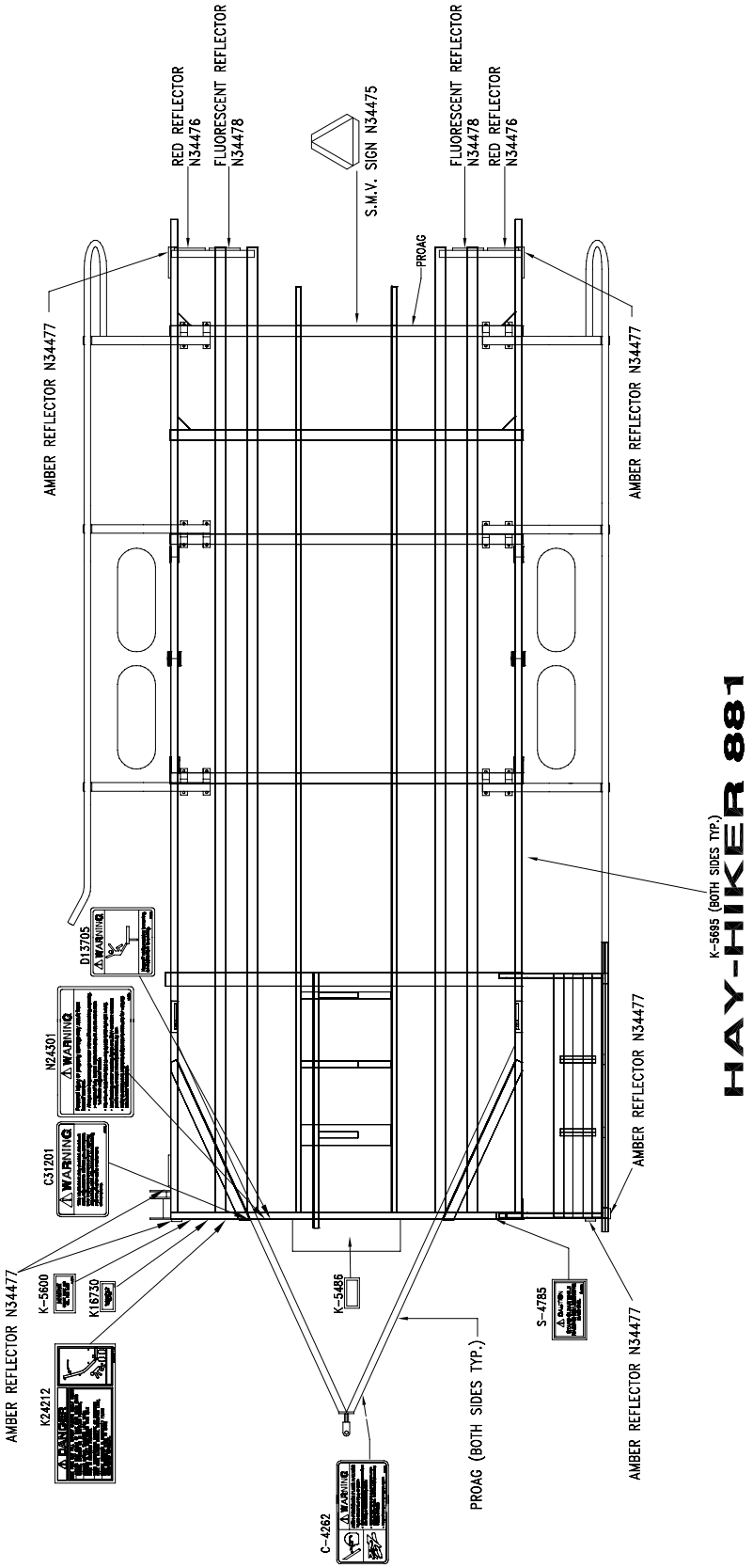
**AS CHAINS STRETCH, REMOVE LINKS FROM BOTTOM CHAINS TO MAINTAIN "SPRING LENGTH" GREATER THAN 16".**

K28561

**Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.**

## Safety Signs - Continued

**881**



## Safety Signs - Continued

### 1400

**DANGER**

OVERHEAD FALLING HAZARD

- Bale fork may fall rapidly causing bodily injury.
- Always stay clear of bale fork when being raised, lowered, or in elevated position.
- Always install transport lock when machine is left unattended with bale fork in elevated position.
- When transporting machine or servicing bale fork always install transport lock.
- Ensure cylinder is completely filled with hydraulic fluid to avoid unexpected movement.

K24212 - Located on Bale Fork

**IMPORTANT**

1/2"

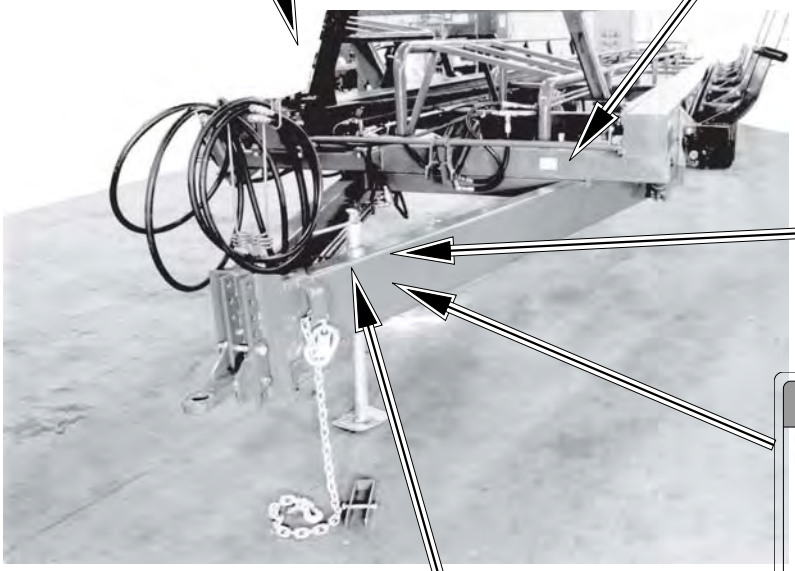
SPRING LENGTH

**CHAIN TENSIONER SPRING**

TIGHTEN TENSIONER TO OBTAIN 1/2" DIMENSION AS SHOWN.

AS CHAINS STRETCH, REMOVE LINKS FROM BOTTOM CHAINS TO MAINTAIN "SPRING LENGTH" GREATER THAN 16".

K28561



**WARNING**

Keep off while machine is moving or mechanism is running.

D13705

**WARNING**

Personal injury or property damage may result from loss of control.

- Always use large enough tractor with sufficient braking capacity.
  - ➤ Weight of fully loaded implement should not be more than 1.5 times weight of tractor.
- Maximum recommended towing speed is 20 mph (32 km/h).
- Use flashing amber warning lights and SMV emblem when on public roads, except where prohibited by law.
- Refer to tractor and implement Operator's Manuals for weights and further information.

N24301

**WARNING**

HIGH-PRESSURE FLUID HAZARD

To prevent serious injury or death:

- Relieve pressure on hydraulic system before servicing or disconnecting hoses.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

C-4262

## 881 Reflectors

The Slow Moving Vehicle (S.M.V.) Emblem and Safety Reflectors must be secured on the machine to promote safe transportation of this implement.

**Note: Always replace missing or damaged reflectors.**

- ● **N34477 Amber Reflector**
- ■ **N34476 Red Reflector**
- ◆ **N34478 Fluorescent Reflector**
- ▲ **SMV Emblem**

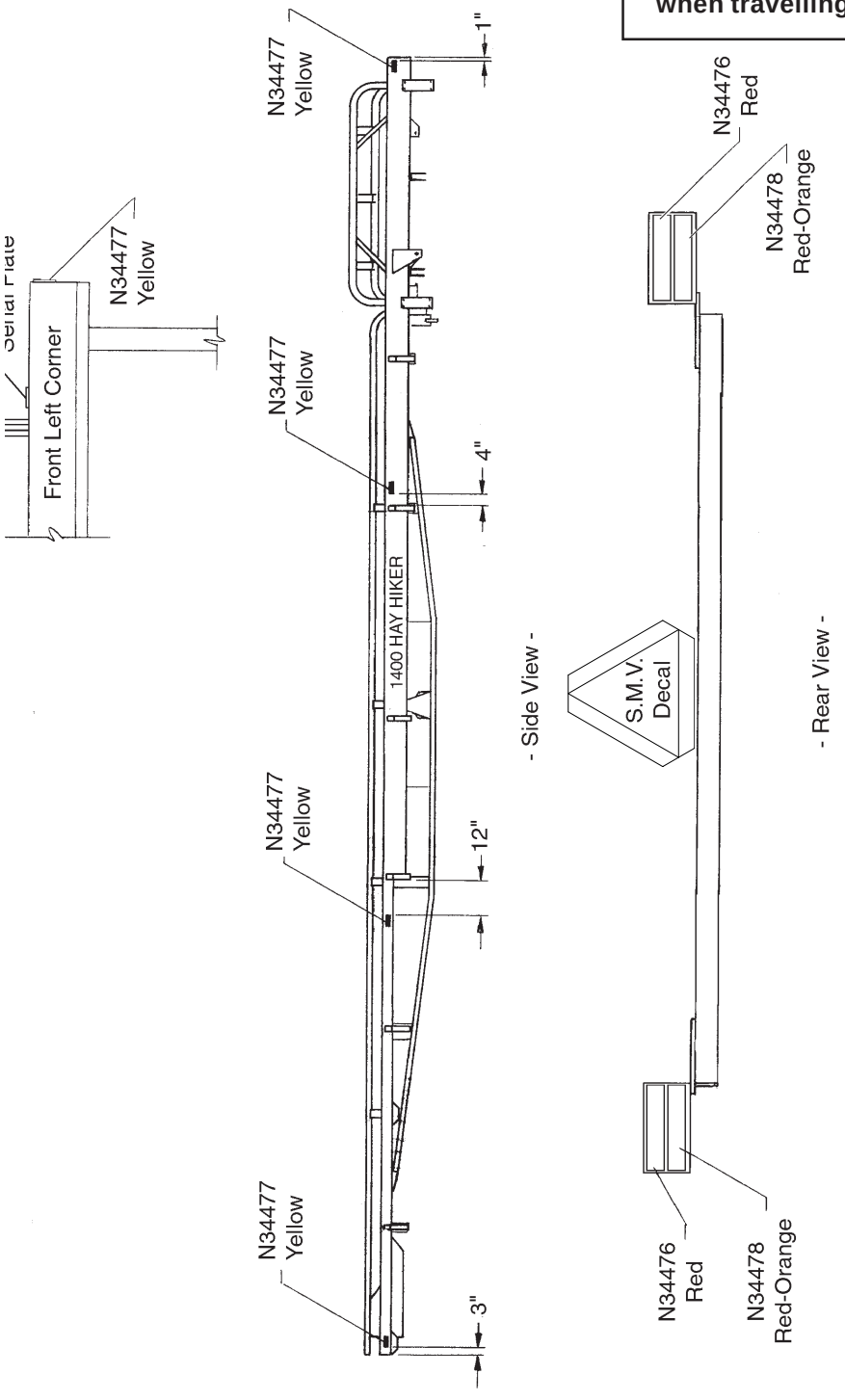
**Use SMV Emblem when transporting, to warn vehicles approaching from the rear. Comply with all provincial, federal and local laws when travelling on the highway.**

## 1400 Reflectors

The Slow Moving Vehicle (S.M.V.) Emblem and Safety Reflectors must be secured on the machine to promote safe transportation of this implement.

**Note: Always replace missing or damaged reflectors.**

**Use SMV Emblem when transporting, to warn vehicles approaching from the rear. Comply with all provincial, federal and local laws when travelling on the highway.**



## Lighting and Marking

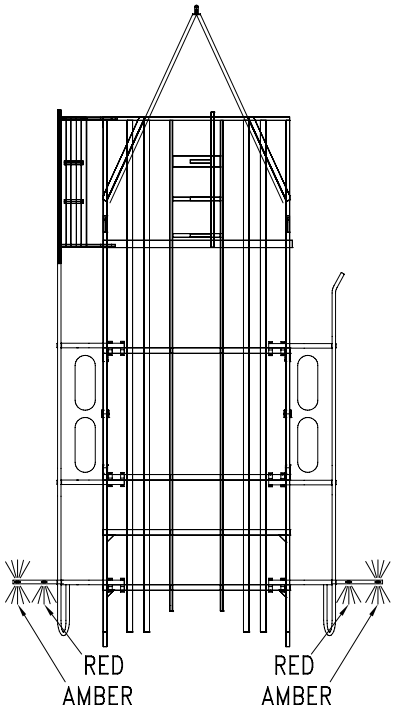
PROAG recommends the use of correct lighting and marking to meet the ASAE standard for roadway travel. Be familiar with and adhere to local laws.

Amber warning and red tail lights secured on the machine promote correct transportation of this implement.

**Note: Always replace missing or damaged lights and/or connectors.**

Amber warning and red tail lights must be mounted to the rear of the implement and be visible from front and rear. The lights must be within 16 inches (41 cm) of the extremities of the machine and at least 39 inches (99 cm), but not over 10 feet (3 m), above ground level.

**Note: Always replace missing or damage front, side, rear reflectors and SMV emblem.**



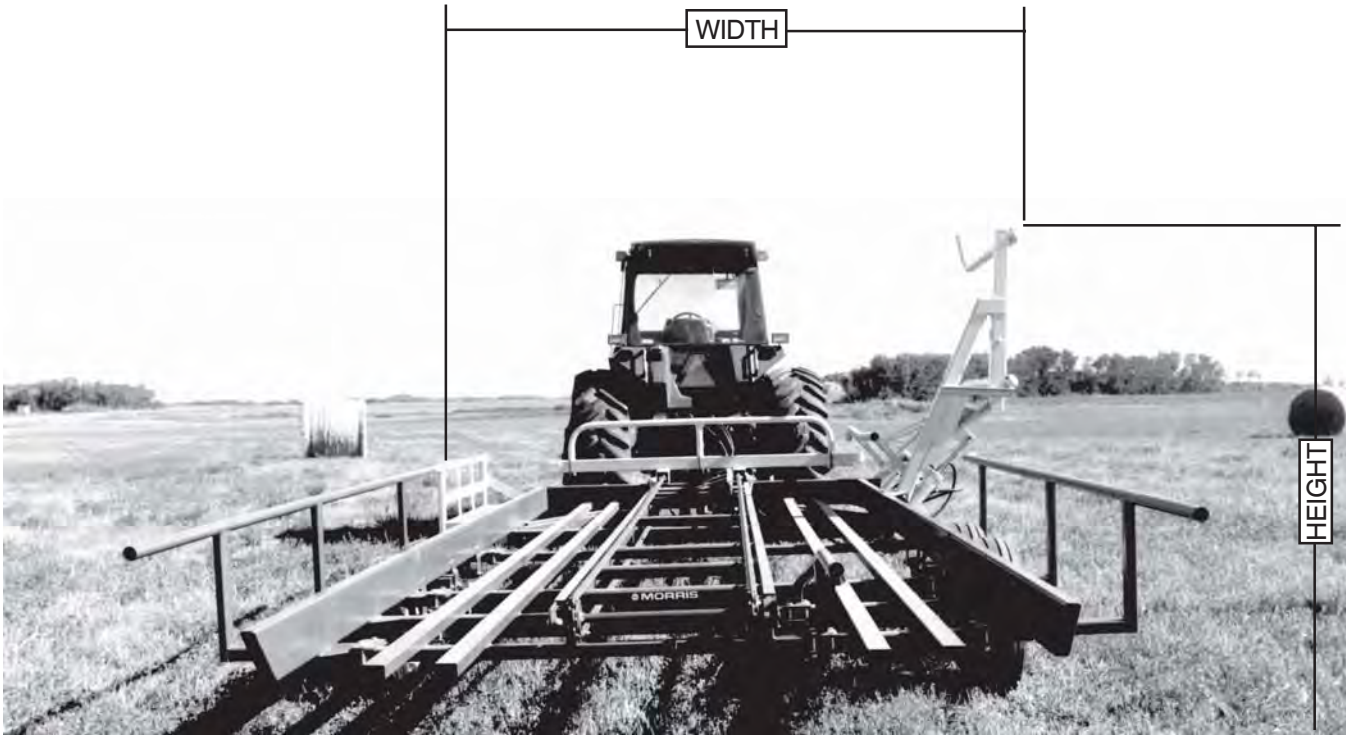

## Notes

# Section 2: Specifications

## Section Contents

# Specifications

## Transport Dimensions




- See Specification Sheet for transport dimensions for each Hay Hiker model

## Bale Weights

| Individual Bale Weights | | |
|---|---|---|
| Bale Size | 881<br>14,800 lb. (6,713 kg) G.V.W. Axles | 1400<br>37,000 lb. (16,818 kg) G.V.W. Axles |
| 48" (1.22 m) | 12 @ 845 lbs. (383 kg) | 18 @ 1610 lbs. (732 kg) |
| 60" (1.52 m) | 8 @ 1267 lbs. (574 kg) | 14 @ 2070 lbs. (941 kg) |
| 63" (1.60 m) | 8 @ 1267 lbs. (574 kg) | 14 @ 2070 lbs. (941 kg) |
| 72" (1.83 m) | 8 @ 1267 lbs. (574 kg) | 12 @ 2420 lbs. (1,100 kg) |

## 881 AND 1400 HAY HIKER
**Specifications and Options**

| Model | 881 | 1400 |
|---|---|---|
| Length | 29' 8 1/2" (9.06 m) | 44' 10" (13.67m) |
| Width Unloaded | With Rails - 13' 9" (4.19 m) | Rails Out - 13' 1" (3.99 m) |
| | Without Rails - 13' 4" (4.06 m) | Rails In - 11' 4" (3.45 m) |
| Weight Unloaded | 4,660 lbs. (2,118 kg) | 7,455 lbs. (3,389 kg) |
| Weight Loaded | 14,800 lbs. (6,713 kg) | 36,455 lbs. (16,571 kg) |
| Load Capacity Weight | 10,140 lbs. (4,599 kg) | 29,000 lbs. (13,182 kg) |
| Load Capacity (Round Bales) | 12 - 48" (1.22 m) Length | 18 - 48" (1.22 m) Length |
| | 8 - 60" (1.52 m) Length | 14 - 60" (1.52 m) Length |
| | 8 - 63" (1.60 m) Length | 14 - 63" (1.60 m) Length |
| | 8 - 72" (1.83 m) Length | 12 - 72" (1.83 m) Length |
| Tires | (4) - 11L x 15FI - Load Range D<br>6 Bolt Hub | (8) - 11L x 15FI - Load Range F<br>8 Bolt Hub |
| Transport Height | 8' (2.44 m) | 12' (3.66 m) |
| Number of Wheels | 4 | 8 |
| Automatic Bale Turner | Standard | Standard |
| Automatic Bale Unloading | Standard | Standard |
| Frame - Tubing | 2" (5 cm) x 8" (20.3 cm) | 8" (20.3 cm) x 8" (20.3 cm) |
| Bale Divider | Standard | Standard |
| Bale Stop | Standard | Standard |
| Side Rail Kit | Standard | Standard |
| Cylinders - Fork | (2) - 3 1/2" (8.9 cm) x 8" (20.3 cm) | (2) - 3 1/2" (8.9 cm) x 12" (30.5 cm) |
| - Bed Lift | (1) - 3" (7.6 cm) x 12" (30.5 cm) | (2) - 3" (7.6 cm) x 12" (30.5 cm) |
| Selector Valve | Standard | Standard |
| Safety Lights | Standard | Standard |
| Safety Chain | Standard | Standard |
| Hitch Clevis | Standard - Single Tab<br>Optional - Double Tab | Standard - Single Tab |
| Tractor Requirement | 100 HP (74 Kw) Minimum | 180 HP (133 kW) Minimum |

## Notes

# Section 3: Checklist

## Section Contents

## SAFETY-ALERT SYMBOL

**Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means:**

**ATTENTION - BE ALERT.**

**Your safety is involved.**

## Manuals

**Note: Pre-Delivery Inspection Form must be completed and submitted to ProAG within 30 days of delivery date.**

**Warranty Void if Not Registered**

**Parts Manual** Order Part Number K20393P for the 881

Order Part Number K24346P for the 1400

## Checklist

Please read the Operator's Manual carefully and become a "SAFE" operator.

Adopt a good lubrication and maintenance program.

### General

____Check if assembled correctly.

____Proper chain tension.

____Check hose connections

### Lubrication: Grease

____Fork Assembly

____Rear Drive Shaft Bearings

____Wheel Hubs

### Lubrication: Oil

____Drive chain

____Push Bar Chain

### Tire Pressure:

____See Maintenance, Section 6

### Transport:

____Lock-up pins must be in place.

____Tighten wheel bolts.

____Check hose connections.

### OWNER REFERENCE

Model: _____

Serial No: _____

Dealer: _____

Town: _____ State: _____

Phone: _____

OWNER/OPERATOR: _____

Date: _____

**TAKE SAFETY SERIOUSLY.**

**DO NOT TAKE NEEDLESS CHANCES!!**

**Notes**

# Section 4: Introduction

## Section Contents

## Introduction

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and adjustments, so that you may obtain maximum service and satisfaction from your new PROAG Hay Hiker.

To protect your investment, study your manual before starting or operating in the field. Learn how to operate and service your Hay Hiker correctly, failure to do so could result in personal injury or equipment damage.

If you should find that you require information not covered in this manual, contact your local PROAG Dealer. The Dealer will be glad to answer any questions that may arise regarding the operation of your PROAG Hay Hiker.

PROAG Dealers are kept informed on the best methods of servicing and are equipped to provide prompt efficient service if needed.

Occasionally, your Hay Hiker may require replacement parts. Your Dealer will be able to supply you with the necessary replacement parts required. If the Dealer does not have the necessary part, the PROAG Factory will supply the Dealer with it promptly.

Your PROAG Hay Hiker is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.

881 HayHiker

1400 HayHiker

**Keep this book handy for ready reference at all times.** It is the policy of ProAG to improve its products whenever it is possible to do so. The Company reserves the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

# Section 5: Operation

## Section Contents

## Section Contents

**CAUTION**

**BE ALERT**

**SAFETY FIRST**

**REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.**

## Application

The ProAG Hay Hiker is designed to transport & store large round bales with a minimum amount of time and effort to the operator.

## Tractor

### Tires

- Proper ballast and tire pressure are required when pulling heavy implements.
- Consult your tractor operator's manual and follow all recommended procedures.

### Hydraulics

- Wipe all hydraulic fittings and couplers with a clean cloth to avoid contaminating the system.
- Check that the hydraulic reservoir is filled to the proper level.

### Drawbar

- Centre and pin in a fixed position for easier hitching and greater stability.

**Warning**

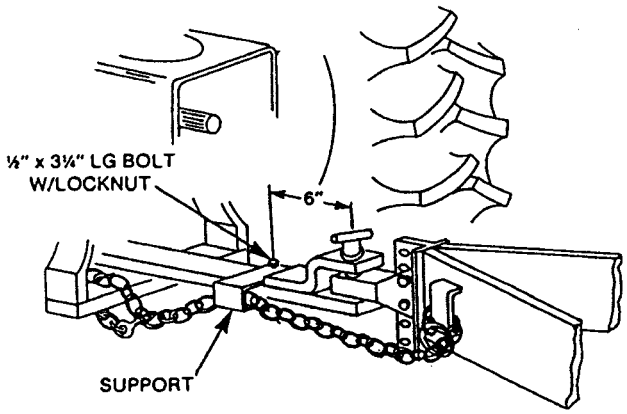
**Do not permit smoking, sparks or an open flame where combustible fuels are being used. Keep the work area well ventilated.**

**Warning**

**Do not search for high-pressure hydraulic leaks without hand and face protection. A tiny, almost invisible leak can penetrate skin, thereby requiring immediate medical attention.**

## CAUTION

**A safety chain will help control towed machines should it accidentally separate from the drawbar while transporting. A runaway machine could cause severe injury or death. Use a safety chain with a strength rating equal to or greater than the gross weight of the towed machines.**



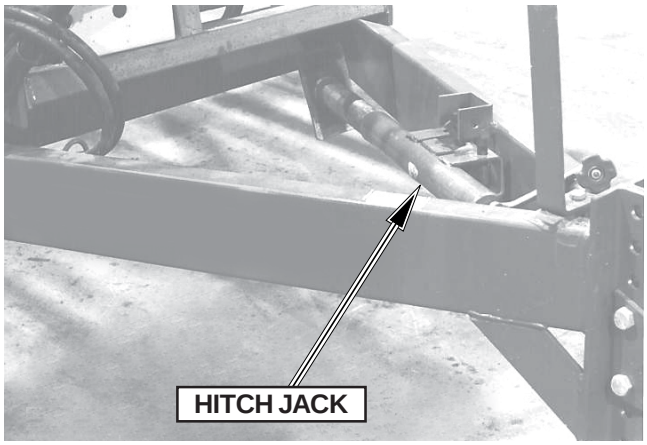

**Attach safety chain to the tractor drawbar support or other specified anchor location with the appropriate parts.**

## Hitching

- Insure hitch pin is in good condition.
- Level clevis with tractor drawbar using hitch jack.
- Back tractor into position and attach hitch clevis to drawbar, using an adequate hitch pin.
- Lock hitch pin in place with a hairpin or other proper locking device.
- After tractor to implement connection is made, relieve pressure off the hitch jack.
- Place hitch jack in raised position.
- Route Safety Chain through chain support and drawbar support.
- Lock safety hook onto chain.

**Note: Provide only enough slack in chain to permit turning.**

- Ensure hydraulic hose quick couplers are dirt free.
- Inspect all fittings and hoses for leaks, bends or kinks.
- Connect the hydraulic hoses to the tractor quick couplers.

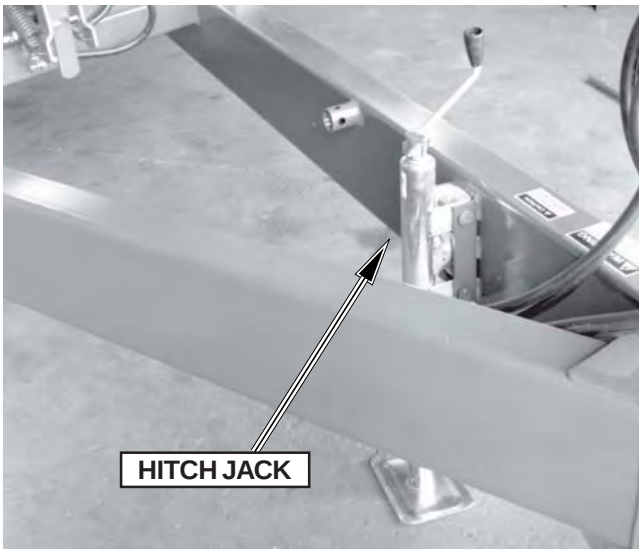



## Caution

**Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.**

## Unhitching

- Unload any bales that are on the Hay Hiker, the hitch jack will not safely support the added weight.
- Pin hitch jack in storage position.
- Lower hitch jack taking the weight off the Hay hiker clevis.
- Ensure all transport locks are properly secured. See Transport Section below for more details.
- Relieve pressure in the hydraulic hoses by positioning tractor hydraulic lever in “float” position or turn tractor engine off and cycle lever back and forth several times.
- Disconnect the hydraulic hoses.
- Remove the safety chain.
- Remove the drawbar pin.




**CAUTION**

**Hydraulic oil under pressure can penetrate the skin causing serious injury. Avoid personal injury by relieving all pressure, before disconnecting hydraulic hoses.**

## Transport

Observe all applicable safety precautions under transport heading in Safety, Section 1.

- Refer to Specifications, Section 2 for weight, transport height and width.
- Transport with tractor only!
- Always connect safety chain provided to the towing vehicle.

### Lights

- Ensure proper reflectors and safety lighting are in place. Refer to Safety Section 1.
- Be familiar with, and adhere to, local laws.

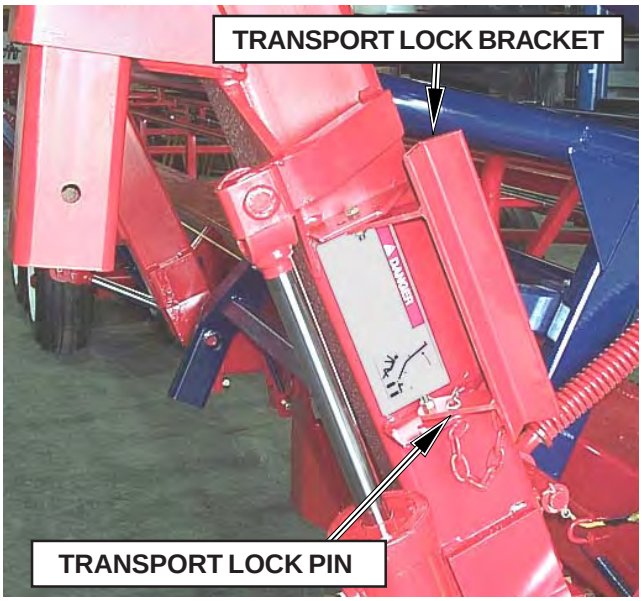
### Speed

- Always travel at a safe speed. Do Not Exceed 20 M.P.H. (32 kph).
- The combined weight of the Hay Hiker and bales ***must not exceed 1.5 times*** the weight of towing vehicle.
- **REDUCE SPEED** with bale load. **Do Not** Exceed a speed of 10 M.P.H. (16 kph).
- Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

## Transport - continued

### Transport to Field Position

- As a precaution, check surrounding area to be sure it is safe to lower fork.
- Operate hydraulics to extend fork cylinders.
- Remove the transport lock pin from the front cylinder and disengage by swinging transport lock bracket up.
- Secure transport lock bracket with lock pin.



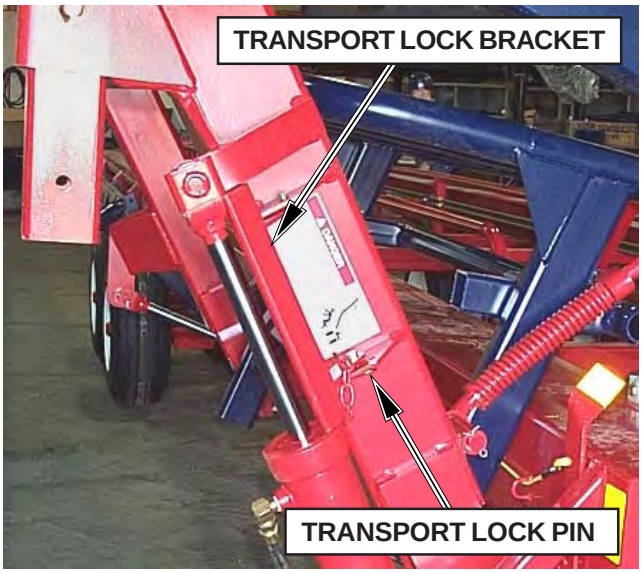

### Field to Transport Position

- Hydraulically raise fork to its highest position.
- Remove the transport lock pin and engage by swinging transport lock bracket down.
- Secure transport lock bracket with lock pin.

**PROAG** WILL NOT BE RESPONSIBLE FOR ANY DAMAGES OR OPERATOR INJURY RESULTING FROM NON-USE OR IMPROPER USE OF TRANSPORT LOCKS.

**⚠ Danger**

**Always stay clear of bale fork being raised, lowered or in elevated position. Ensure cylinders are completely filled with hydraulic fluid - Fork may fall rapidly causing injury.**

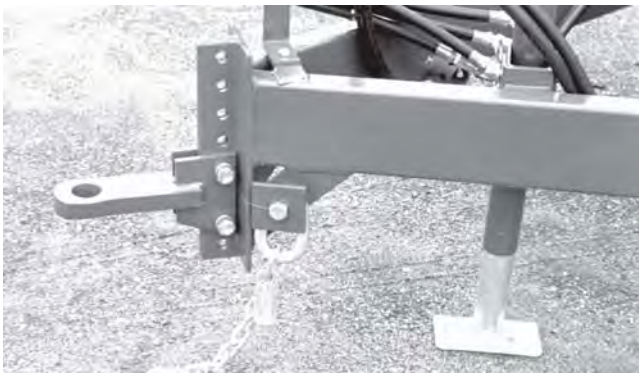



- Inspect tires for any serious cuts or abrasions. If such occurred, tire should be replaced.
- Ensure Safety Chain is properly installed. Refer to Safety, Section 1.
- Inspect axles and hubs for wrapped twine. Remove any twine to prevent damage to bearing seals.

**Note: For narrower transport with no payload, the side rails can be tipped inwards on the 1400 only.**

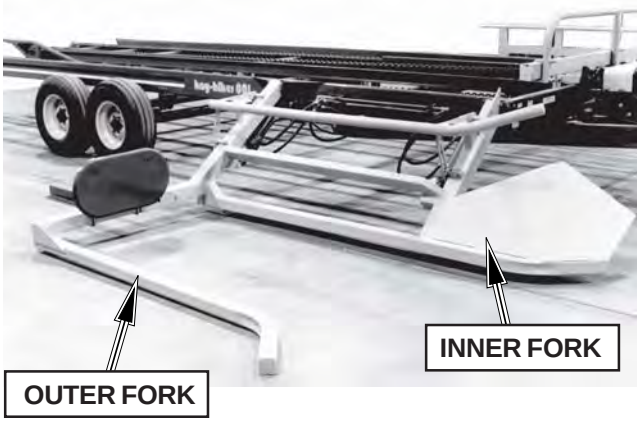
## Level Hay Hiker

- Adjust the hitch clevis so the Hay Hiker runs Level.
- If Inner Fork touches ground first, the front of Hay Hiker is too low.
- If Outer Fork touches ground first, the front of Hay Hiker is too high.



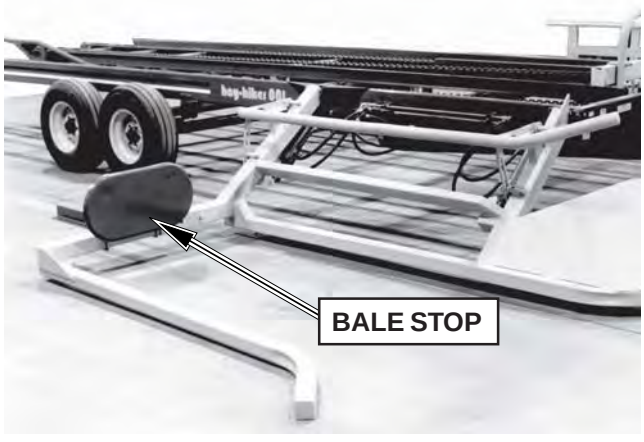
## Bale Fork Adjustment

- Adjust the pick-up fork width to best suit the size of bales to be picked up. Do not attempt to lift bales over the maximum recommended weight as indicated in the chart below.
- 881 Hay Hiker adjust outer fork.
- 1400 Hay Hiker adjust inner fork.




## Bale Stop Adjustment

- Position the bale stop to best suit the size bales to be picked up.
- Locate the Bale Stop near outer fork, this will aid in eliminating soft centred bales from hooking on stop.



## Side Rail

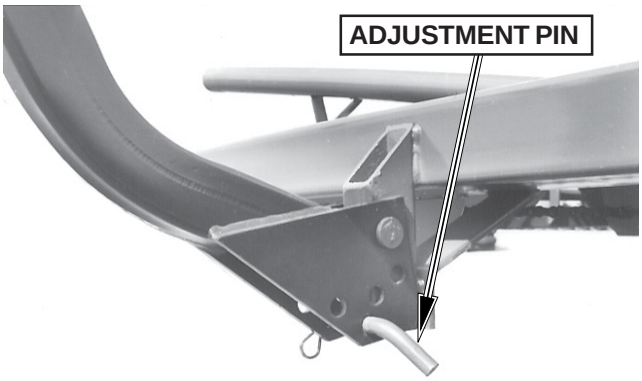
- Adjust Side Rails to best suit the size of the bales to be loaded.

881 Hay Hiker:

- Loosen “U”-bolts retaining side rails.
- Move bale stop to appropriate position.
  - Up to 60” diameter bales use inner position.
  - Over 60” diameter bales use outer position.
- Adjust side rails to match up with bale stop.

1400 Hay Hiker:

- Move all adjustment pins to the same adjustment hole. (3 positions)




**1400 Side Rail Adjustment**

## Loading

The ProAG Hay Hiker has a bale turner incorporated into the fork. The bale turner allows the operator to pick a bale at almost any angle desired, making loading easier and quicker.

- Drive Hay Hiker up to the bale, lowering the bale fork to run lightly on the ground surface.
- Position the inner corner of the bale with the bale deflector. Bale deflector should contact approximately 1/4 of the bale.
- Drive Hay Hiker forward allowing bale to rotate back between the forks.
- Once the bale is against the bale stop, raise the fork fully to the upright position, allowing the bale to roll over the bale deflector, and come to rest on the left side of the Hay Hiker bed.
- On the 1400 Hay Hiker the bale contacts the bale deflector actuator, which disengages the deflector for the loading of the second bale.

  Note: The 881 does not have an actuator.

**Note: If the bed tilts slightly when operating the bale fork, this indicates that there is air in the system. With the bale fork fully raised hold the hydraulic lever for several seconds to phase out air from the hydraulic system.**

## Loading - Continued

- Follow the same procedure to pick up the second bale. As the second bale is being loaded it misses the now stationary deflector and rolls on the Hay Hiker bed next to the fork.
- When two bales are positioned on the Hay Hiker bed engage the Push Bar to push the bales back on the Hay Hiker bed far enough to allow more bales to be loaded.

  **Hint - Use the Bale Deflector Actuator as a guide for when to stop pushing bales back.**

- On the 1400 the bales must be pushed back far enough to allow the Bale Deflector Actuator to re-engage the Bale Deflector.
- Return the Push Bar to the forward position.

**Note: Push Bar must be returned to forward position to activate fork cylinders.**

- Repeat above procedure to load Hay Hiker. The 1400 Hay Hiker has a full load indicator on the right side of the bed.

**Note: Push Bar must push against two bales when being unloaded. If an uneven number of bales are to be loaded, the odd bale must be placed at the rear of the Hay Hiker bed.**



## Unloading

- Put tractor in neutral. In extremely soft conditions the tractor should be in low gear.
- Lower fork slightly to clear the bales.
- Engage push bar moving it enough to switch the selector valve to the bed tilt cylinders.
- Tilt the bed until it skims the ground surface.

**Note: Do not allow the bed to push any soil or debris. Dirt may build up on the rear causing damage to the push bar drive.**

- Engage the Push Bar and push the bales off the Hay Hiker.
- As the bales come off, the Hay Hiker and tractor will be pushed ahead allowing a smooth movement of unloading.

**Note: On the 1400 Hay Hiker the selector valve located with the automatic chain tightener acts as a fail safe device. If there is a malfunction in the Push bar Drive, the shaft of the selector valve will be pushed in, shutting off the flow of oil to the orbit motor.**

- When the bales are unloaded lower the bed.
- Return the Push Bar to the forward position.
- Raise Fork to its highest position.
- Inspect Axle and Hubs for wrapped twine. Remove any twine to prevent damage to the bearing seals.
- **Clean drive sprockets** (1400 only) of any debris. (i.e. twine, flax straw, etc.) If the area between the sprocket and pillow block bearing gets wrapped with trash the chain could jump a tooth causing the push bar to go out of time.

## Push Bar Drive Hydraulics

The Push Bar is controlled by an orbit motor which can be used on a closed hydraulic system or open hydraulic system.

To move the Push Bar back, hydraulic fluid is forced from the tractor through a selector valve (1400 only) to the orbit motor. The hydraulic fluid flows through the orbit motor causing the drive shaft to turn, which moves the Push Bar back.

**Note: The selector valve (1400 only) acts as a fail safe device. If there is a malfunction in the Push Bar Drive, the shaft of the selector valve will be pushed in, shutting off the flow of oil to the orbit motor.**

The fluid exits the orbit motor and then through a line lock valve to the tractor. On the 1400 Hay Hiker the Push Bar comes to a stop at the back of the Hay Hiker Bed when the Push Bar depresses the plunger on the rear line lock valve.

To return the Push Bar to the front of the Hay Hiker Bed, the hydraulic fluid flows though the orbit motor in the reverse direction to that described above, until the Push Bar depresses the plunger on the line lock valve. This causes the poppet to set and stop the flow of oil from the tractor, stopping the push bar at the front of the Hay Hiker Bed.

**IMPORTANT: All Air Must Be Removed from the Push Bar Drive Hydraulics** to prevent damage to the Drive Components. See Maintenance for Details. (1400 only)

See Hydraulic Schematics for more details.

## Fork/Bed Tilt Hydraulics

The Hydraulic Fork/Bed Tilt lift system is controlled by a parallel hydraulic control system with a selector valve to switch between the Fork and Bed Tilt cylinders.

To lift the Fork, the Push Bar must be in its forward position which will automatically switch the selector valve to the fork cylinders.

Hydraulic fluid is forced through the selector valve to the butt ends of the Fork cylinders causing them to extend, raising the fork.

To lower the Fork the hydraulic fluid flows through the cylinders in the reverse direction.

**Note: There is a relief valve installed to prevent damage to the fork assembly if the transport lock was not removed prior to lowering the fork. If this occurs, the oil bypasses back to the tractor.**

To lift the Hay Hiker Bed, the Push Bar must be moved back a few inches to switch the selector valve to the bed tilt cylinders.

Hydraulic fluid is forced through the selector valve to the butt ends of the tilt cylinders causing them to extend raising the bed of the Hay Hiker.

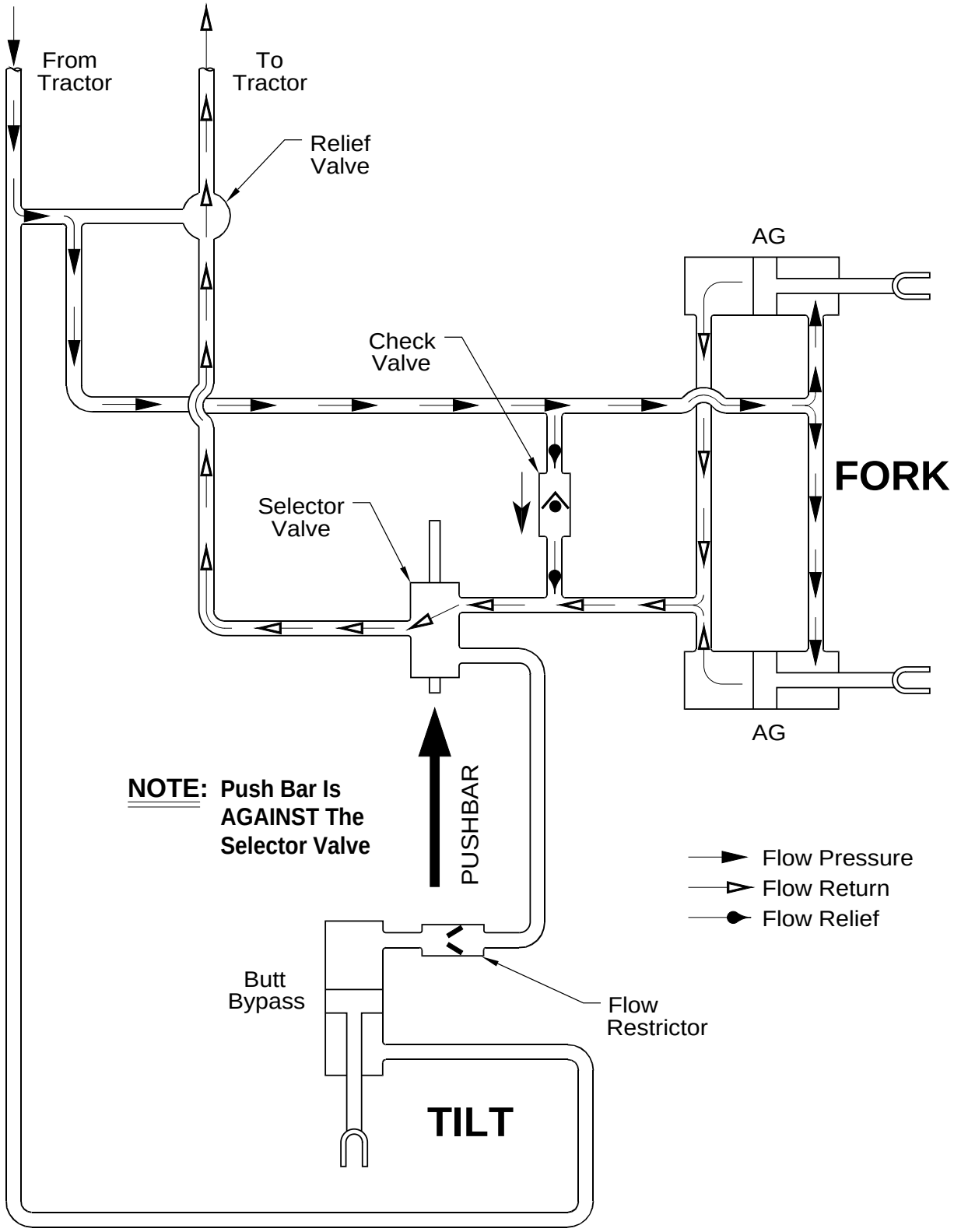
To lower the Hay Hiker Bed the hydraulic fluid flows through the cylinders in the reverse direction. The one-way restrictor valve prevents the bed from lowering too abruptly, maintaining a positive oil pressure in the bed cylinders.

**Note: On the 881 a pressure relief valve is installed to prevent damage to the fork if the bale exceeds the maximum load which the fork can lift. If this occurs, the oil bypasses back to the tractor.**

See Hydraulic Schematics for more details.

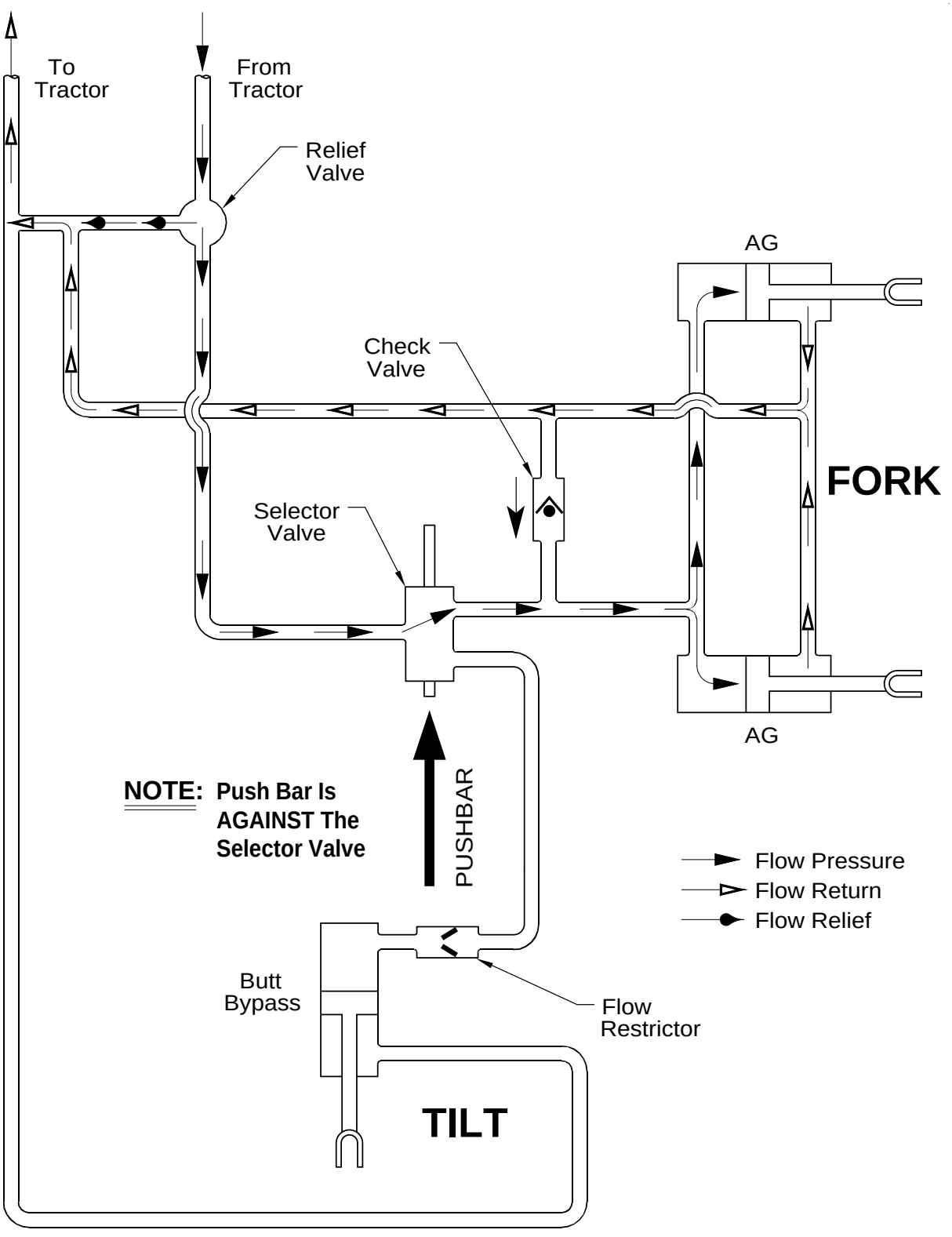
## 881 Hay Hiker Fork/Tilt Hydraulic Schematic

### Lowering Fork



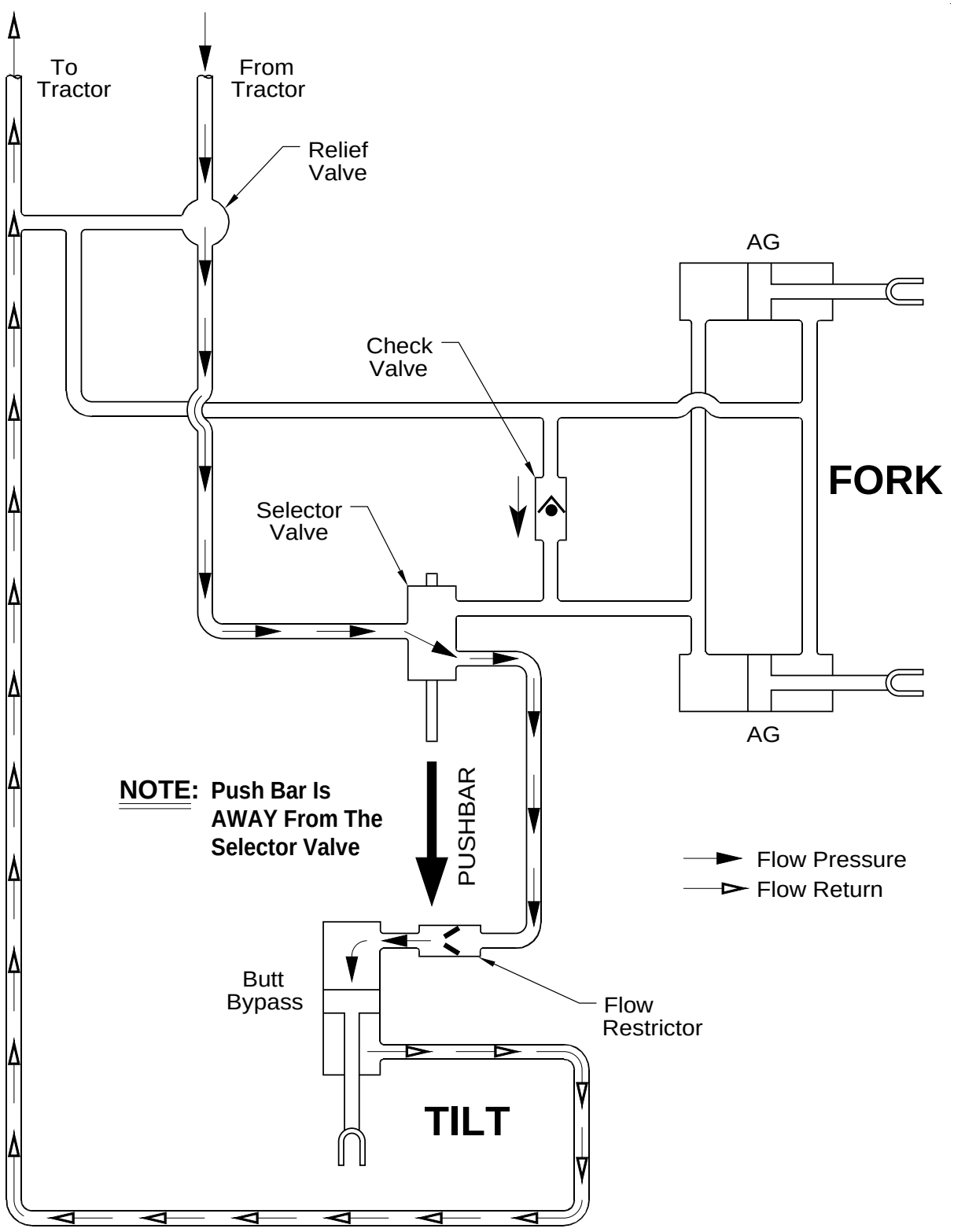
## 881 Hay Hiker Fork/Tilt Hydraulic Schematic

### Raising Fork



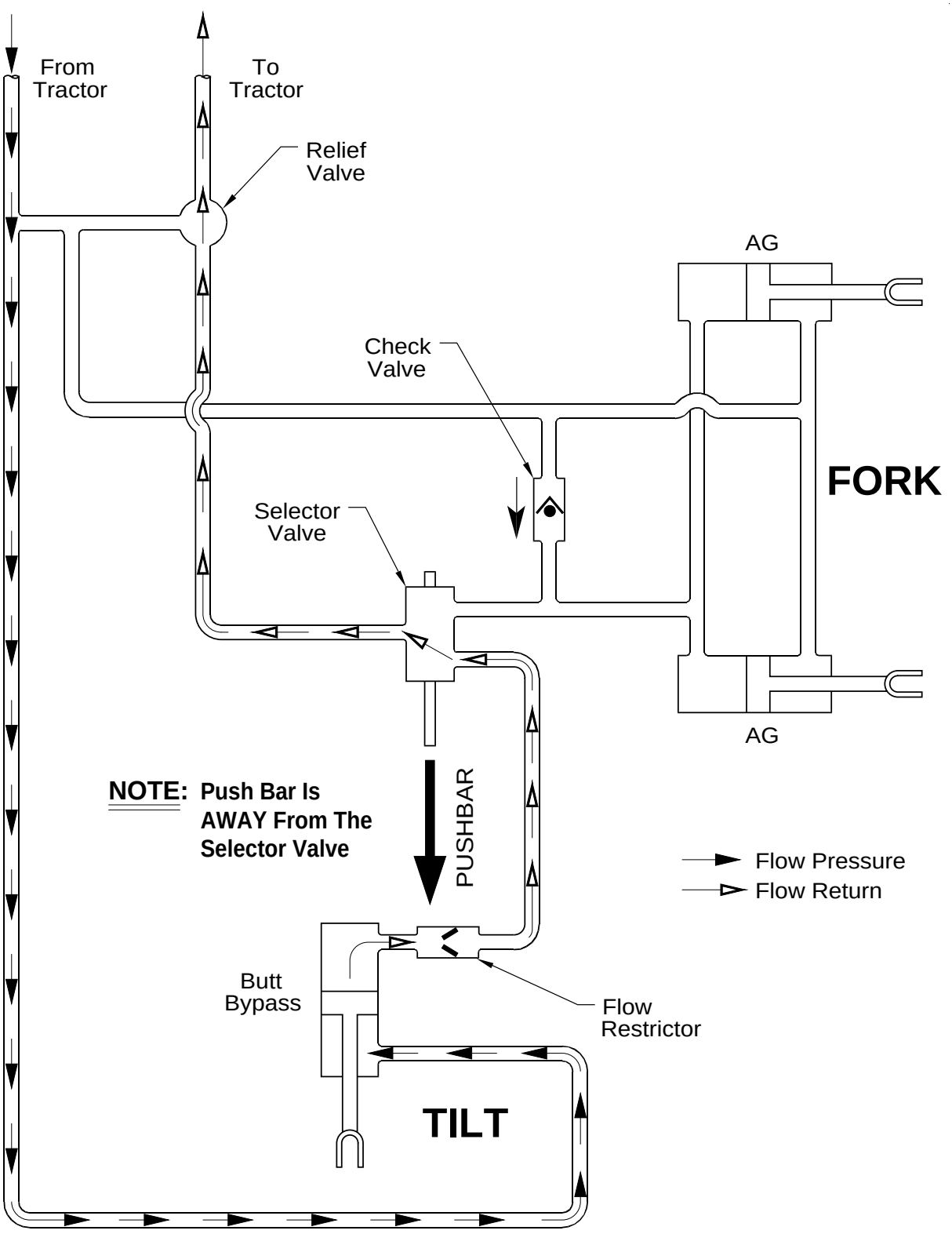
## 881 Hay Hiker Fork/Tilt Hydraulic Schematic

### Raising Bed



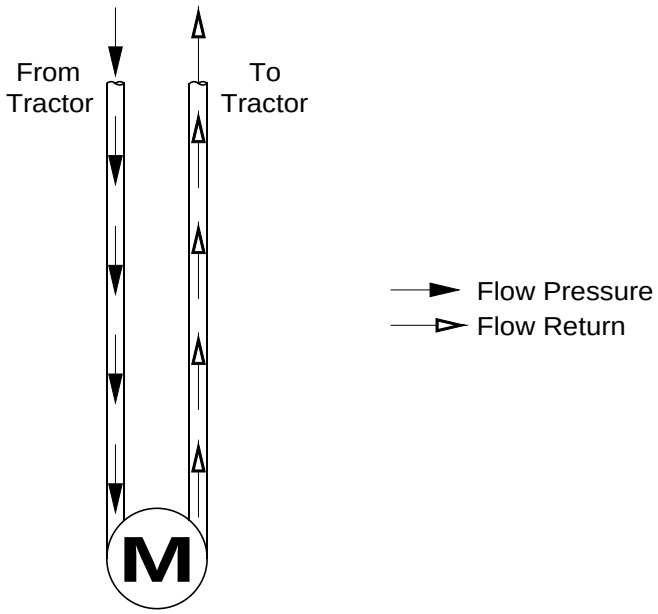
## 881 Hay Hiker Fork/Tilt Hydraulic Schematic

### Lowering Bed

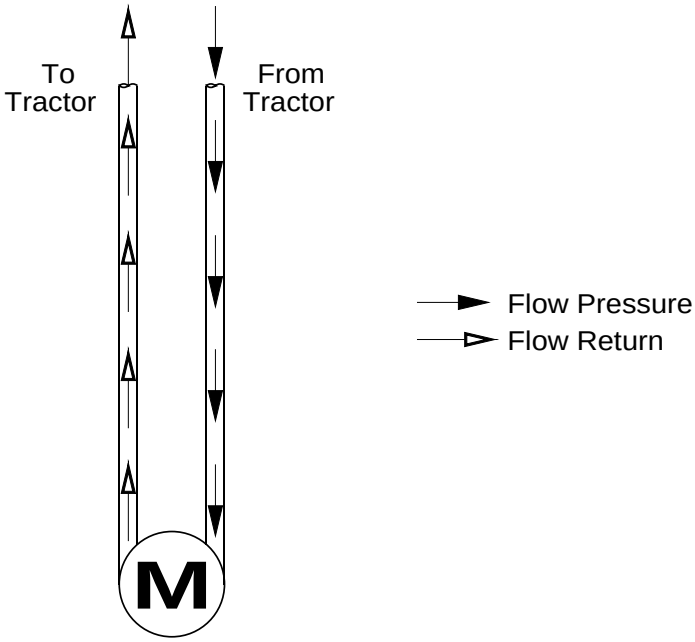


## 881 Hay Hiker Push Bar Drive Hydraulic Schematic

### Pushing Off

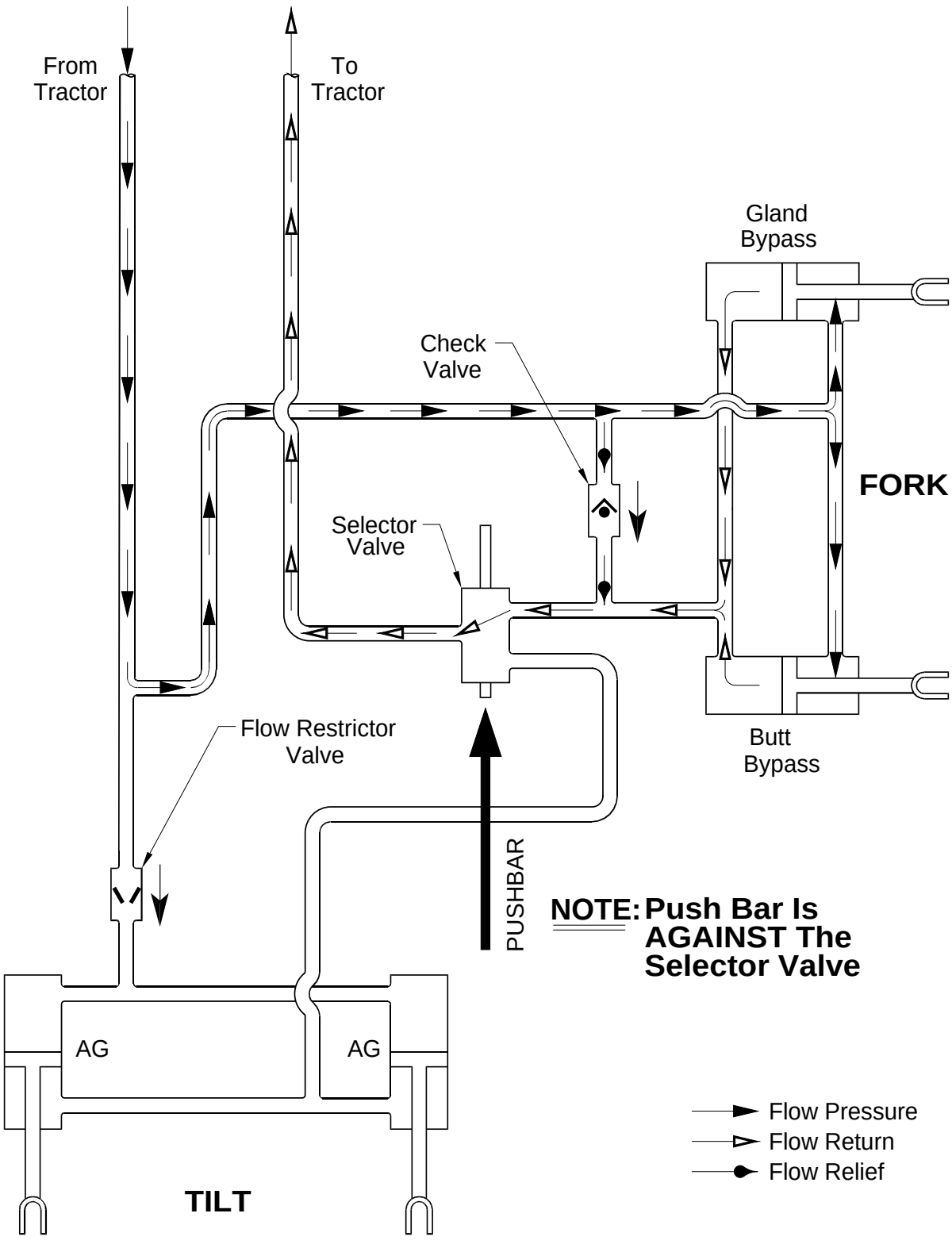



### Returning Push Bar



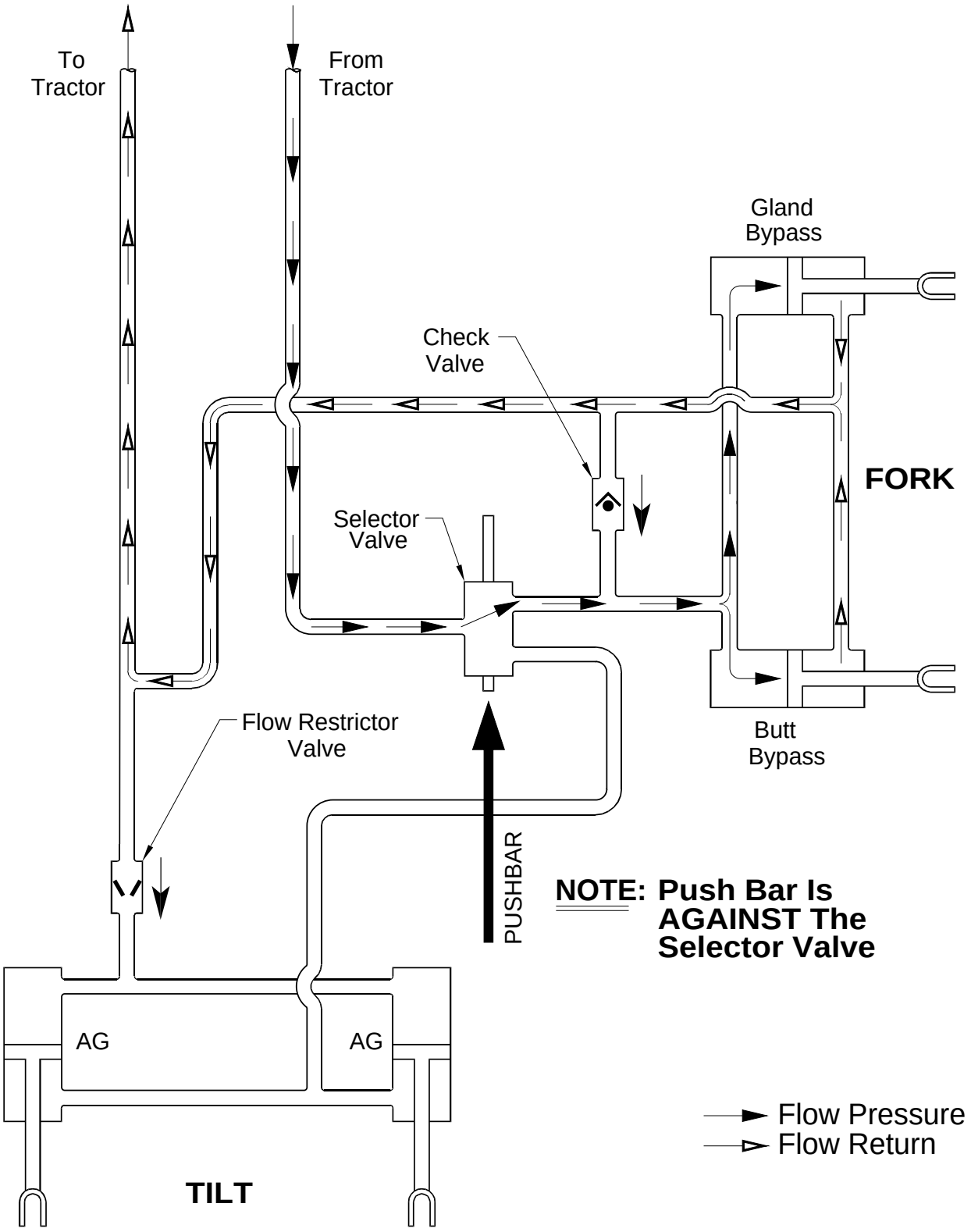
## 1400 Hay Hiker Fork/Tilt Hydraulic Schematic

### Lowering Fork



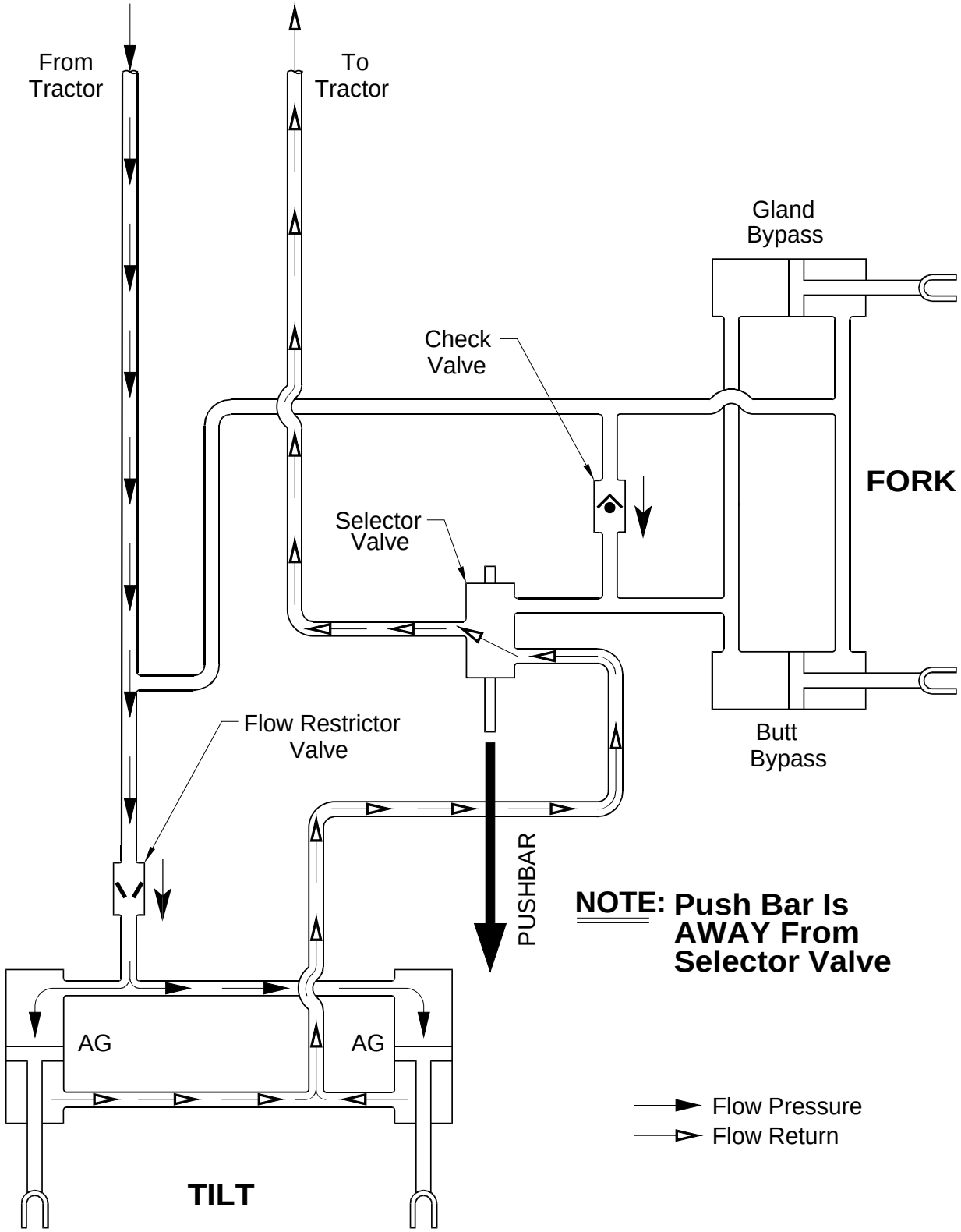
## 1400 Hay Hiker Fork/Tilt Hydraulic Schematic

### Raising Fork



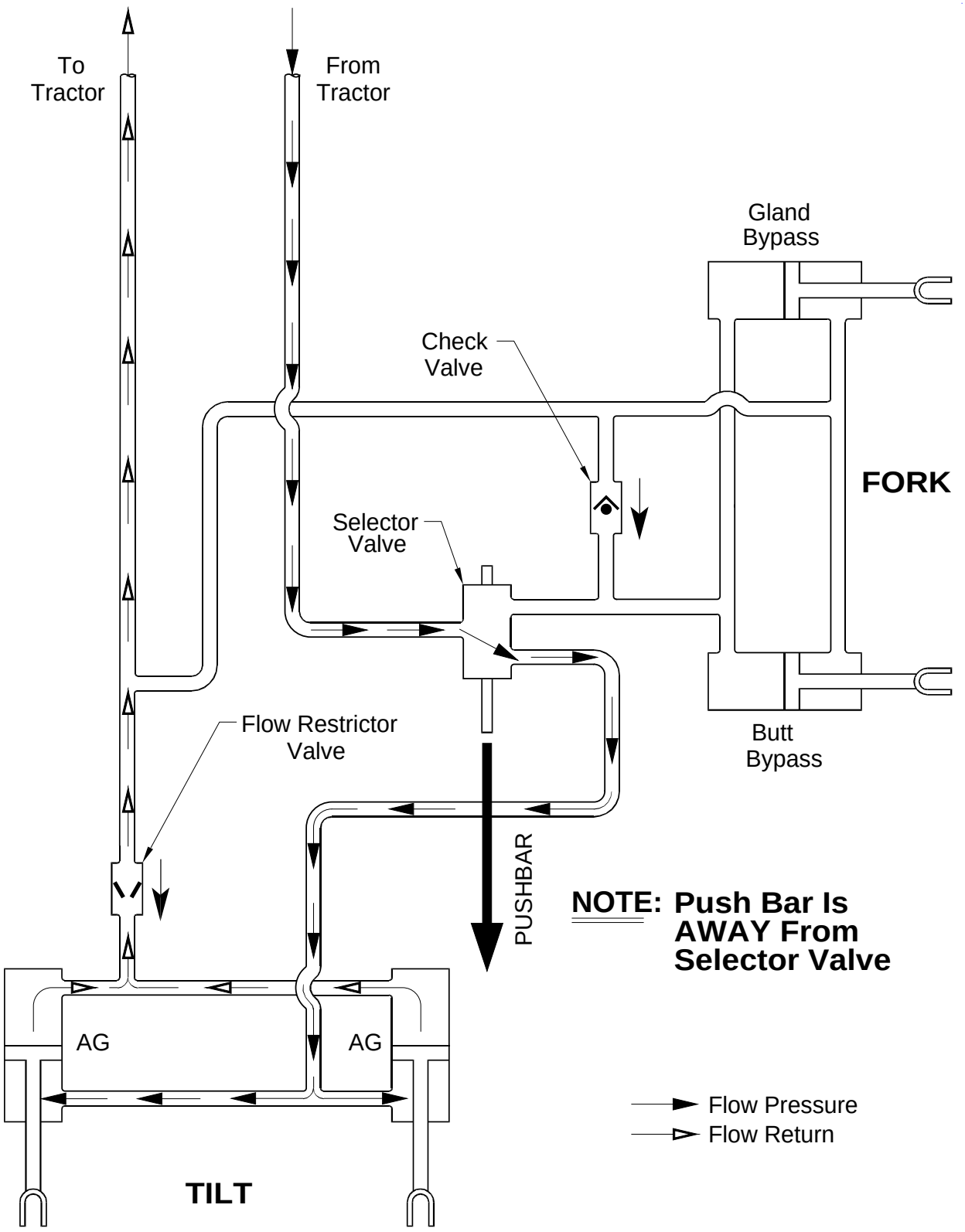
## 1400 Hay Hiker Fork/Tilt Hydraulic Schematic

### Raising Bed



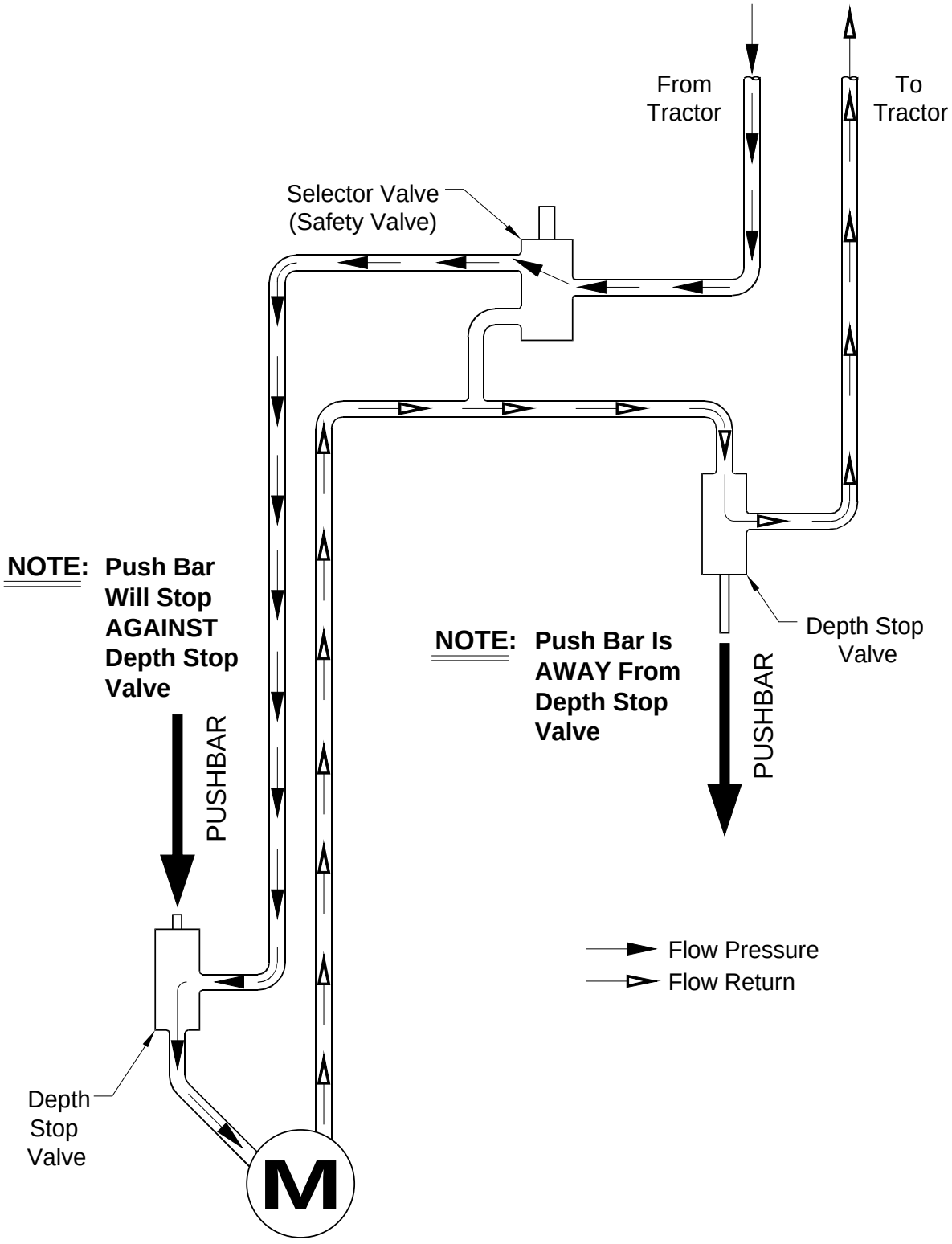
## 1400 Hay Hiker Fork/Tilt Hydraulic Schematic

### Lowering Bed



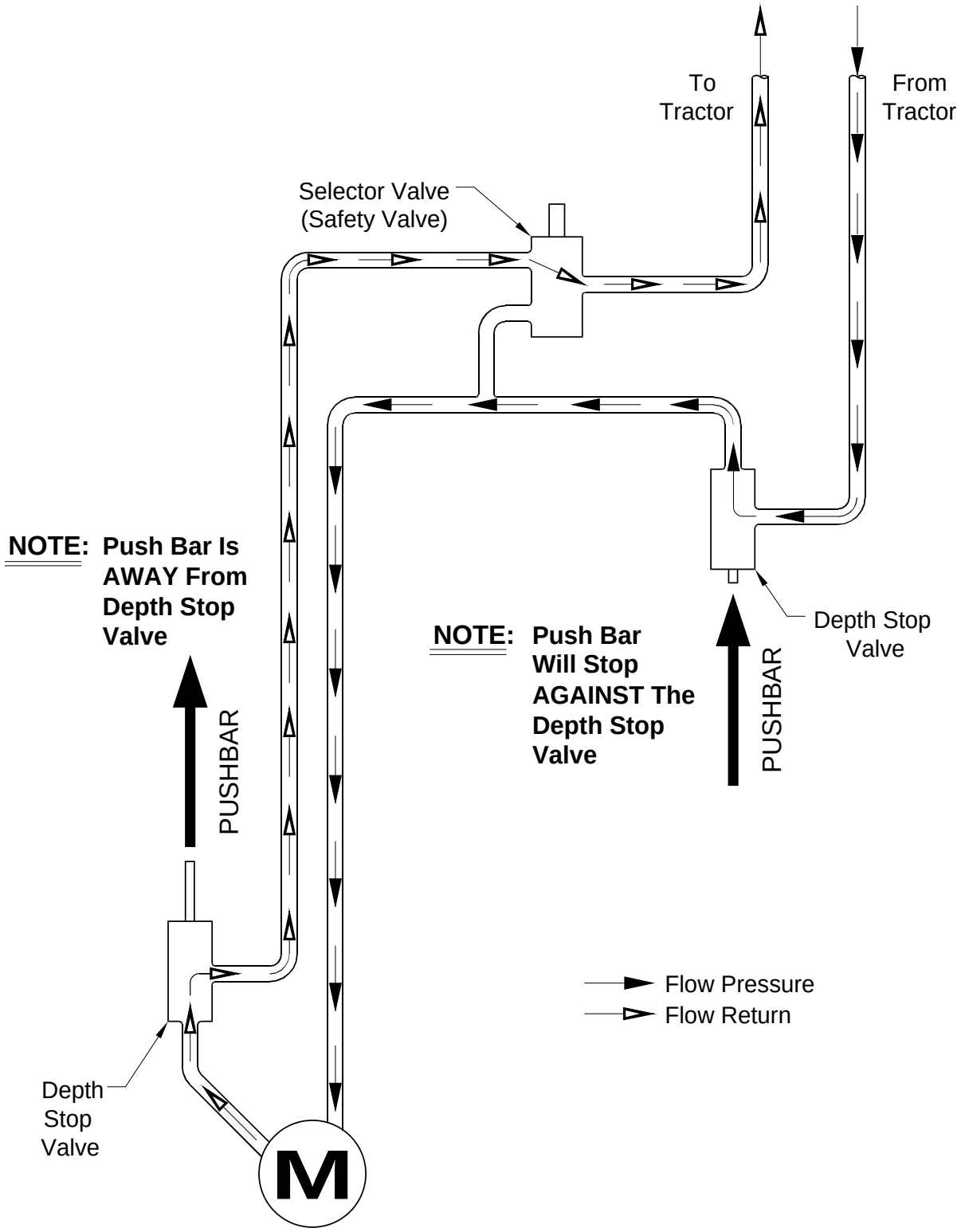
## 1400 Hay Hiker Push Bar Drive Hydraulic Schematic

### Pushing Off



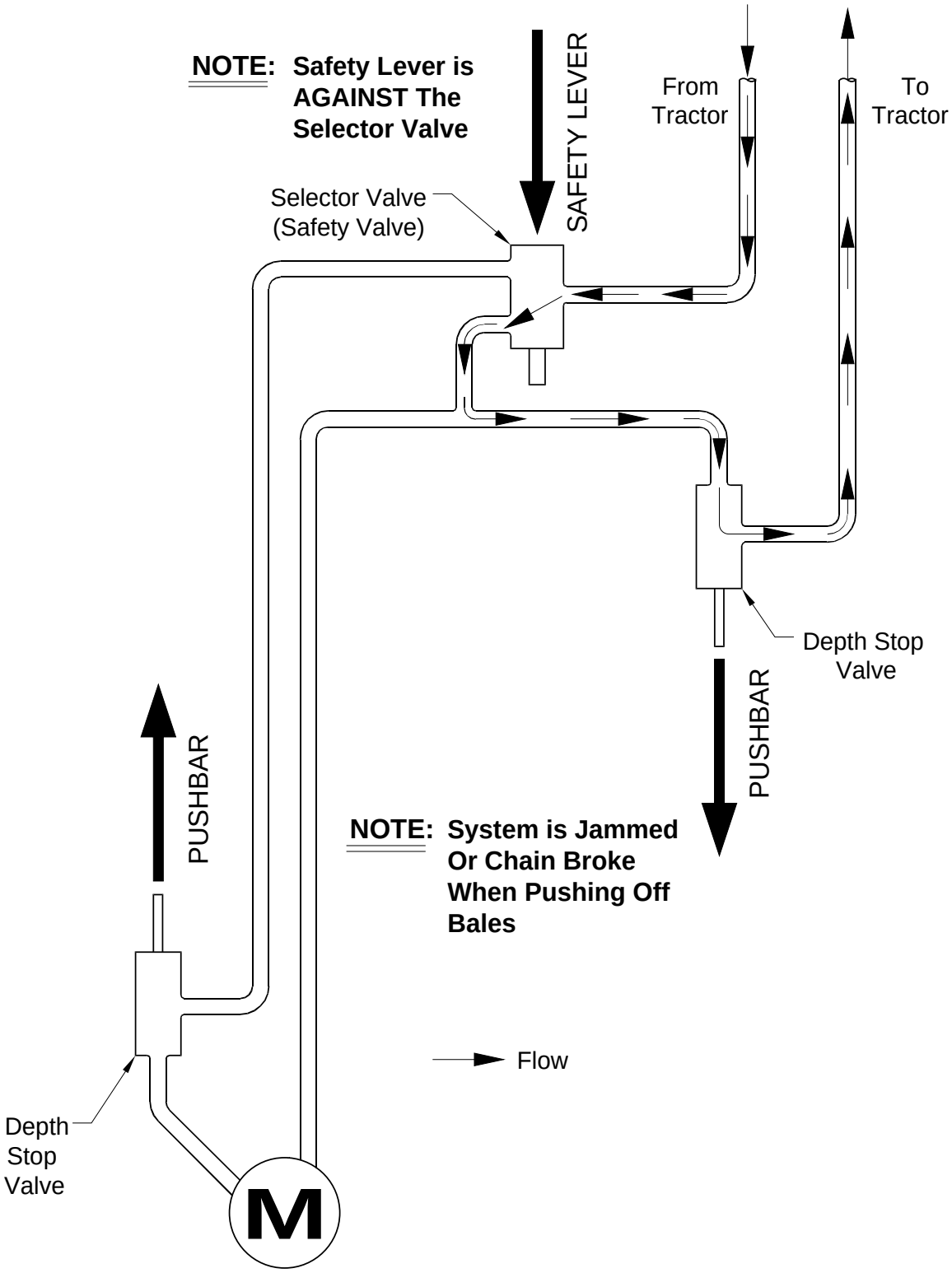
## 1400 Hay Hiker Push Bar Drive Hydraulic Schematic

### Returning Push Bar



## 1400 Hay Hiker Push Bar Drive Hydraulic Schematic

### Safety System Engaged



**Notes**

# Section 6: Maintenance

## Section Contents

**CAUTION**

**BE ALERT**

**SAFETY FIRST**

**REFER TO SECTION 1 AND REVIEW ALL SAFETY RECOMMENDATIONS.**

## General

This section deals with two goals, maximum life and dependable operation. Adopt a regular maintenance and lubrication program. Care and sufficient lubrication is the best insurance against delays.

## Safety

- Always shut off the tractor and remove the key before dismounting.
- Guard against hydraulic high pressure leaks with hand and face protection.
- Never work under the implement unless it is in the down position or transport lock pins are in place and secured with hair pins. Do not depend on the hydraulic system to support the frame.
- Always wear safety goggles, breathing apparatus and gloves when working on seeder filled with chemical. Follow manufactures recommended safety procedures when working with chemicals or treated seeds.

**Warning**

**Securely support any machine elements that must be raised for service work.**

**Caution**

**Keep service area clean and dry. Wet or oily floors are slippery.**

## Tighten Bolts

- Before operating the Hay Hiker.
- After the first two hours of operation.
- Check tightness periodically thereafter.
- Use Bolt Torque Chart for correct values on various bolts.
- Note dashes on hex heads to determine correct grade.

**Note: DO NOT use the values in the Bolt Torque Chart if a different torque value or tightening procedure is given for a specific application.**

- Fasteners should be replaced with the same or higher grade. If higher grade is used, only tighten to the strength of the original.

**Bolt Torque Chart**

| Grade 5 Bolt Marking | | Bolt Size | Grade 8 Bolt Marking | |
|---|---|---|---|---|
| Nm | lb. ft. | | lb. ft. | Nm |
| 11 | 8 | **1/4** | 12 | 16 |
| 23 | 17 | **5/16** | 24 | 33 |
| 41 | 30 | **3/8** | 45 | 61 |
| 68 | 50 | **7/16** | 70 | 95 |
| 102 | 75 | **1/2** | 105 | 142 |
| 149 | 110 | **9/16** | 155 | 210 |
| 203 | 150 | **5/8** | 210 | 285 |
| 366 | 270 | **3/4** | 375 | 508 |
| 536 | 395 | **7/8** | 610 | 827 |
| 800 | 590 | **1** | 910 | 1234 |
| 1150 | 850 | **1-1/8** | 1350 | 1850 |
| 1650 | 1200 | **1-1/4** | 1950 | 2600 |
| 2150 | 1550 | **1-3/8** | 2550 | 3400 |
| 2850 | 2100 | **1-1/2** | 3350 | 4550 |

## Tires

- Inspect tires and wheels daily for tread wear, side wall abrasions, damaged rims or missing lug bolts and nuts, replace if necessary.
- Tighten wheel bolts - refer to Bolt Torque Chart.
- Check tire pressure daily, when tires are cold.
- Correct tire pressure is important.
- Do not inflate tires above the recommended pressure.

**Tire Specifications**

| SIZE | LOAD RANGE | PRESSURE | USED ON |
|---|---|---|---|
| 11L x 15FI | D | 60 P.S.I. | 881 |
| 11L x 15FI | F | 90 P.S.I. | 1400 |

**⚠ Caution**

**Tire replacement should be done by trained personnel using the proper equipment.**

## 881 Lubrication

Greasing pivot points prevents wear and helps restrict dirt from entering. However, once dirt does enter a bearing, it combines with the lubricant and becomes an abrasive grinding paste, more destructive than grit alone.

- Apply new lubricant frequently during operation to flush out old contaminated lubricant.
- Use a good grade of **lithium based grease**.
- Use a good grade of machine oil.
- Clean grease fittings and lubricator gun before applying lubricant.

Refer to the photo below for grease fitting locations.

**1. Hubs**

- Repack with a good quality grease every 500 hours. See *"Wheel Bearings".*

**2. Bale Fork Cylinder Pins**

- Grease Daily.

**3. Bale Fork Pins**

- Grease Daily

**4. Drive shaft bearings**

- Grease every 50 hours.

**5. Drive Chains**

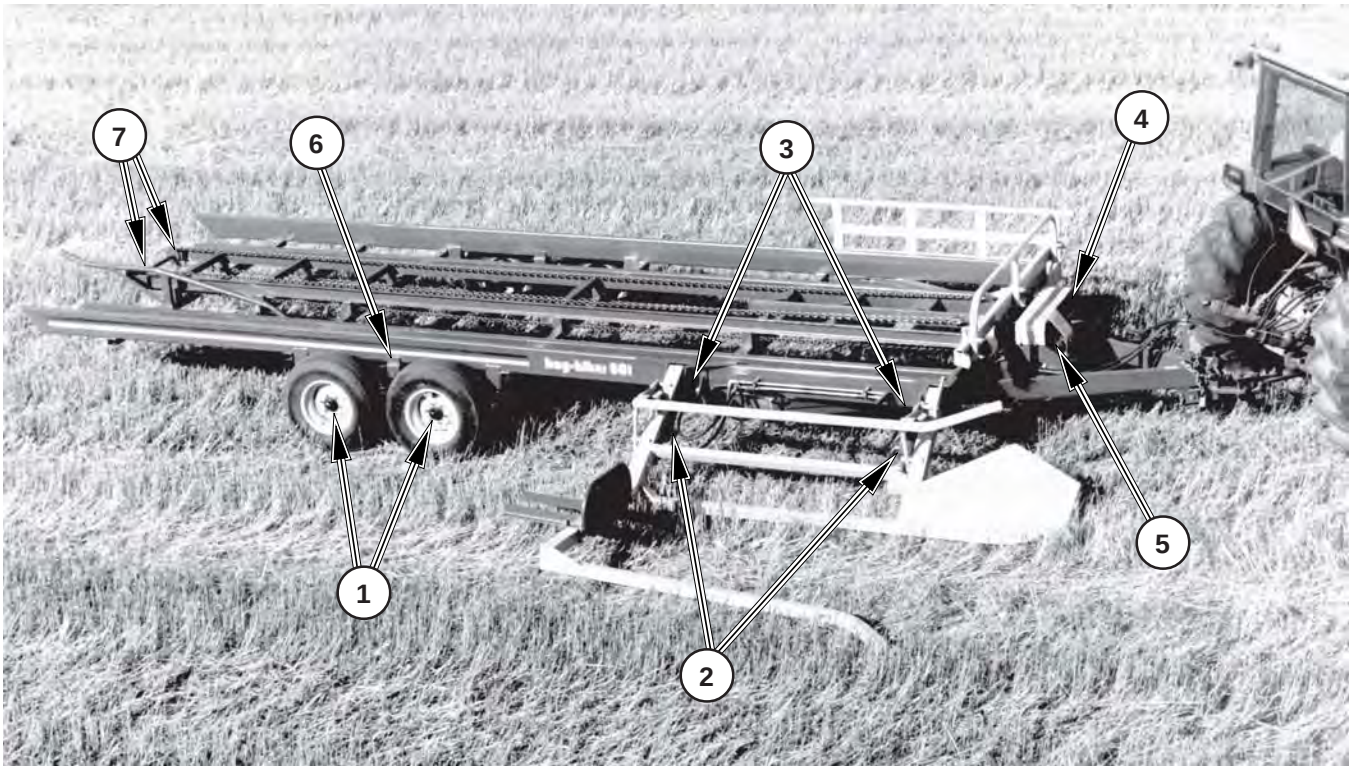
- Oil every 50 hours.

**6. Spring Equalizer Arm Pivot Bolt**

- Grease Daily.

**7. Idler Pulleys**

- Grease Daily.



## 1400 Lubrication

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- Grease Daily.

**3. Drive shaft bearings**

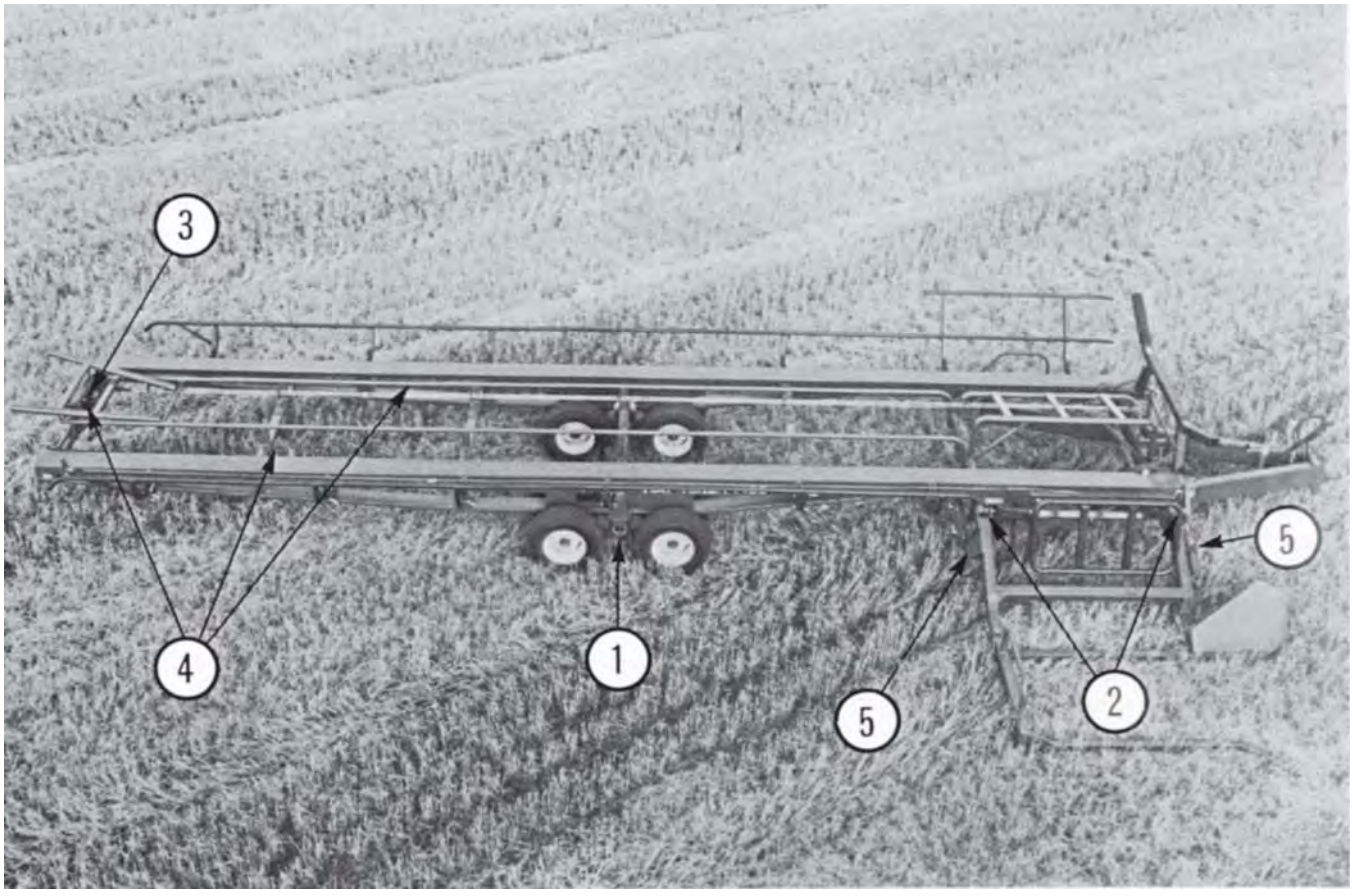
- Grease every 50 hours.

**4. Drive Chains**

- Oil every 50 hours.

**5. Fork Cylinder Pins**

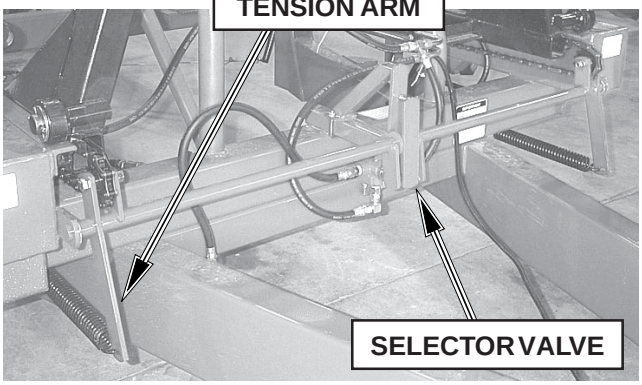
- Grease Daily.



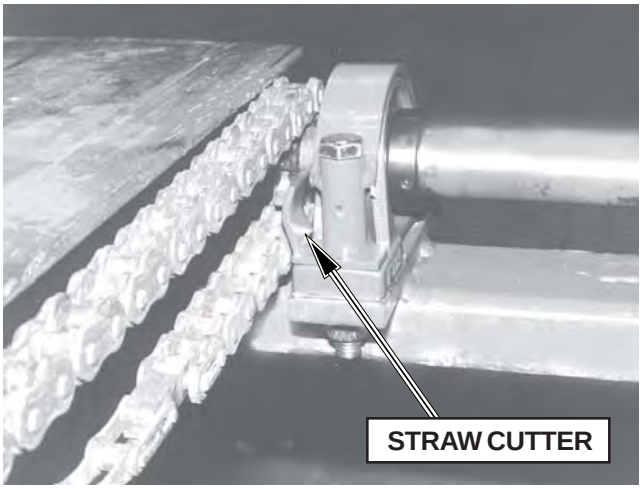
## 1400 Daily Maintenance

To maintain dependable operation and to maximize the life of the 1400 Hay Hiker the following should be done on a daily bases.

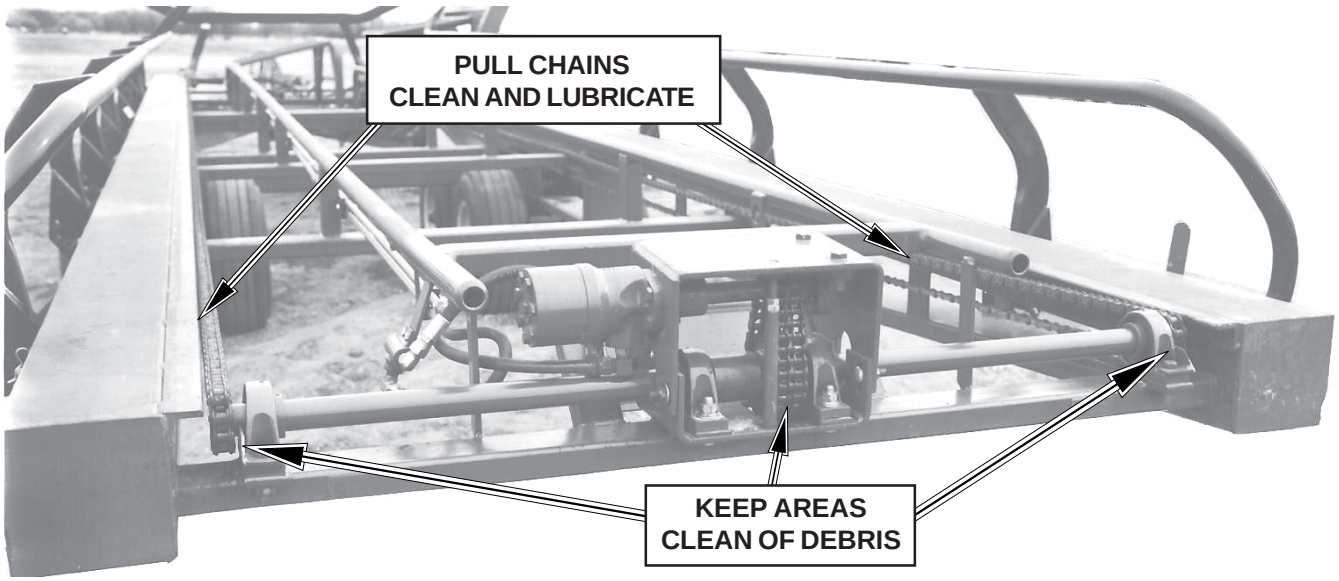
- Check the **Tension Arm dimension**. This dimension must be maintained for correct operation of the safety valve. See *"Push Bar Chain Assembly".*
- **Keep both Selector Valve Spools** clean of any debris and ensure it moves freely. Lubricate Spool (i.e. WD-40) to prevent rusting. See *"Push Bar Chain Assembly".*
- Ensure **Drive Sprockets** are clean of any debris, if the area between the sprocket and pillow block bearing gets wrapped with trash the chain could jump a tooth causing the push bar to go out of time.
- Ensure **Straw Cutters** are in good shape. Replace if worn or damaged.
- Grease **Fork** daily to assure maximum life of bushings.
- Ensure **Pull Chains** are clean of any debris and ensure it moves freely. Lubricate pull chain every 50 hours with a good grade of machine oil.




**Tension Arm**




**Straw Cutters**




**Drive Sprockets**

## Hydraulics

Refer to Section 1 regarding hydraulic safety. In addition:

- Inspect hydraulic system for leaks, damaged hoses and loose fittings.
- Damaged hoses and hydraulic tubing can only be repaired by replacement. DO NOT ATTEMPT REPAIRS WITH TAPE OR CEMENTS. High pressure will burst such repairs and cause system failure and possible injury.
- Leaking cylinders - install a new seal kit.
- Fittings - use liquid Teflon on all NPT hydraulic joints. **Do not use liquid Teflon or Teflon tape on JIC or ORB ends.**
- Hydraulic Hose Connections - when connecting the hoses to the cylinders, tubing, etc. always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life.
- Keep fittings and couplers clean.
- Check the Tractor Manual for proper filter replacement schedule.

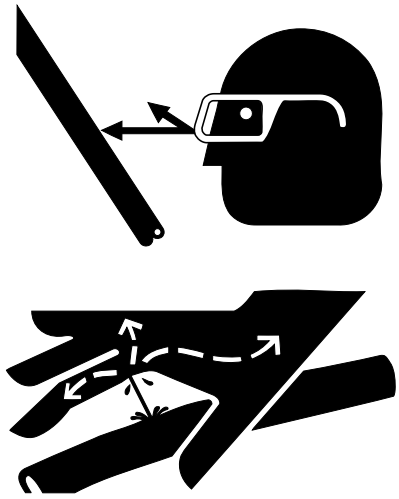
Refer to the Trouble Shooting Section.

Contact your nearest Dealer for genuine repair parts. Dealers carry ample stocks and are backed by the manufacture and regional associations.

**⚠ Caution**

**Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.**

**Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.**



**⚠ Warning**

**HIGH-PRESSURE FLUID HAZARD**

**To prevent serious injury or death:**

- **Relieve pressure on hydraulic system before servicing or disconnecting hoses.**
- **Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.**
- **Keep all components in good repair.**

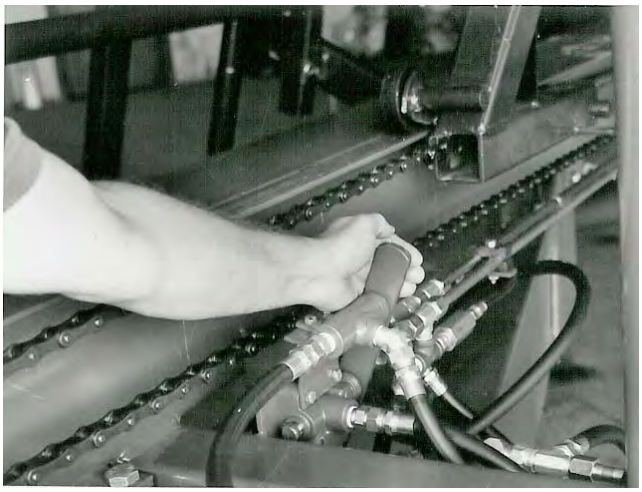
## Hydraulics - continued

**It is very important to have all the air removed from the push bar hydraulic system before operating. Air in the push bar hydraulic system will cause severe damage to push bar components.**

**To remove the air from the Push Bar Hydraulics follow the procedure below: (1400 only)**

- Remove the Double Roller Drive Chain from the orbit motor.
- Operate Hydraulics to run orbit motor in **one direction only** for a minimum of 10 minutes. This will remove all air from the Push Bar Hydraulics.
- Reinstall the Double Roller Drive Chain to the orbit motor.
- Check system by running Push Bar to rear of machine having someone manually close **rear** line lock valve when Push Bar is half ways back.
- If the Push Bar does not stop instantly there is still air in the system and the above procedure must be repeated. If plunger on line lock valve is spongy to push in, the valve is plumbed in wrong and hydraulic lines will have to be reversed.
- Run Push Bar to rear of machine.
- Check system by running Push Bar to the front, having someone manually close **front** line lock valve when Push Bar is halfway back to the front.
- If the Push Bar does not stop instantly there is still air in the system and the above procedure must be repeated. If plunger on line lock valve is spongy to push in, the valve is plumbed in wrong and hydraulic lines will have to be reversed.
- If the Push Bar does stop instantly all air has been removed and the Hay Hiker is ready to operate.

To remove air from the Fork Hydraulic System, raise fork fully holding hydraulic lever for several seconds to phase the air out of the system.



**Check Push Bar Operation**

**Note: Extreme care must be taken to maintain a clean hydraulic system. Use only new hydraulic fluid when filling reservoir.**

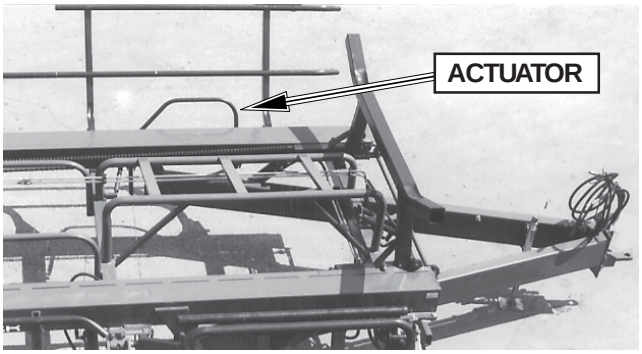
**Important**

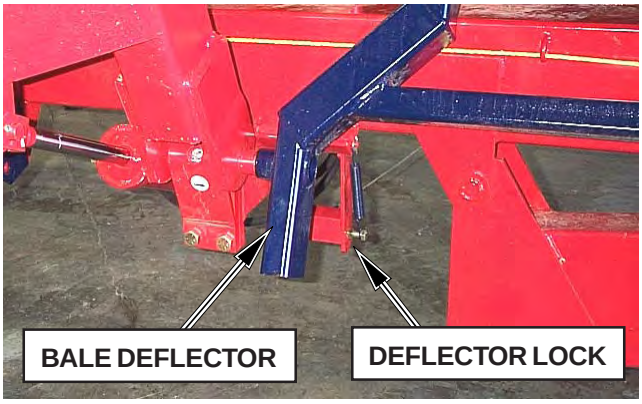
**Remove all air from hydraulic system.**

## 1400 Bale Deflector Actuator

### (1400 only)

- Adjust cable length so that the Bale Deflector does not catch the Deflector Lock, when Actuator is in the upright position against the frame.

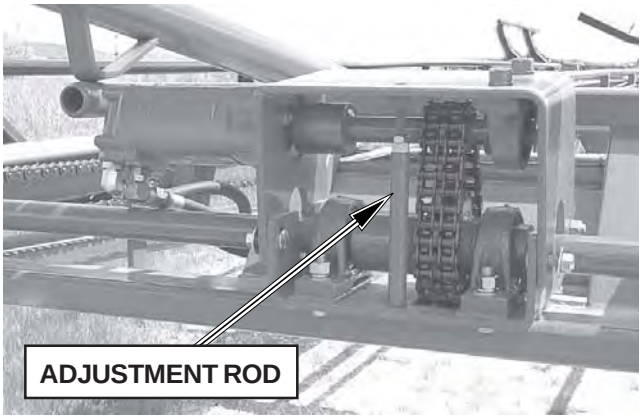



## 1400 Orbit Motor Drive Chain

### (1400 only)

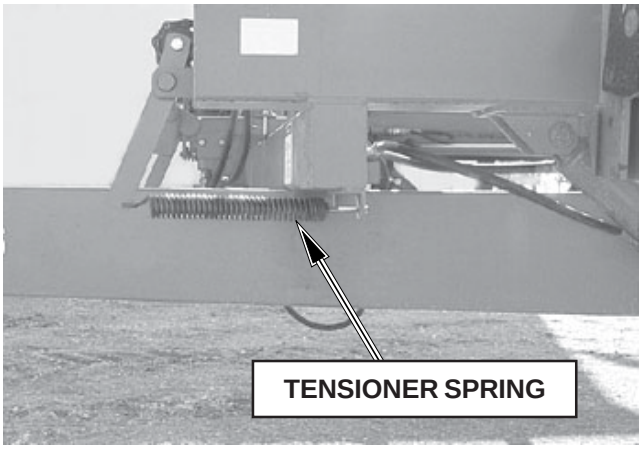
- Inspect weekly for wear and damage.
- Adjust tension so that there is only an 1/8” deflection in the chain.
- Oil every 50 hours.



## 1400 Push Bar Chain Assembly

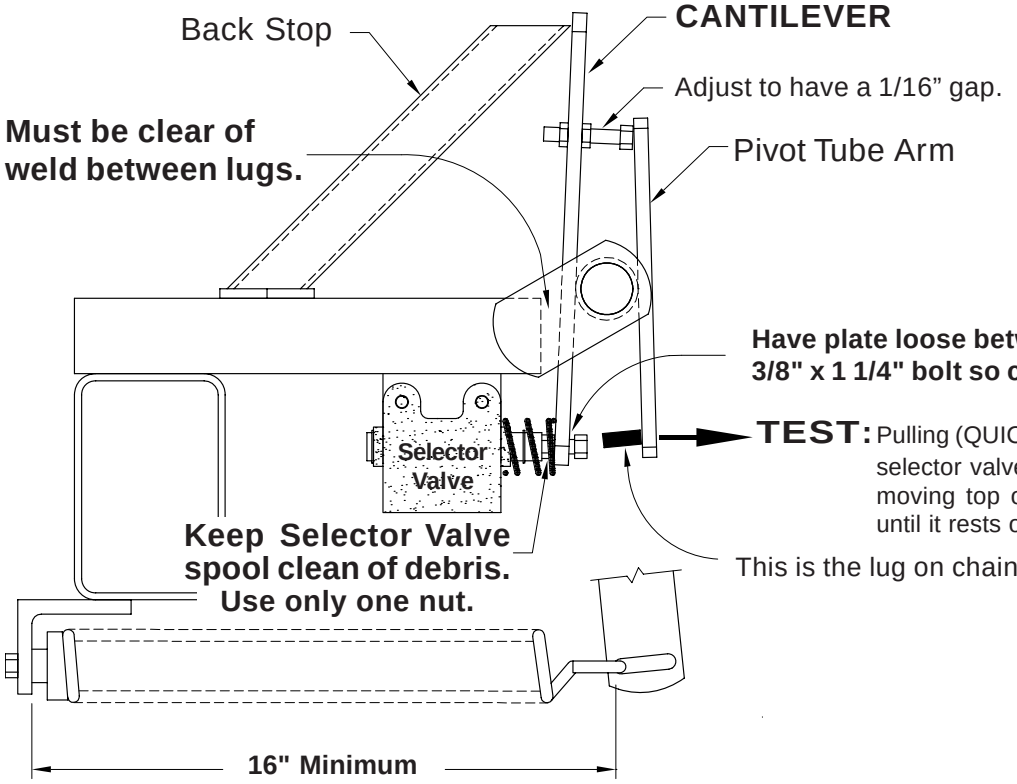
### (1400 only)

- Keep chain tensioner spring fully tighten, to obtain dimension as shown below.
- When the spring dimension reaches 15 1/4", remove 1 Link from bottom 2060 chains.
- Adjust cantilever as shown. Move back stop so the cantilever is as far ahead as possible.
- Adjust top 3/8" x 1 3/4" bolt to within 1/16" of pivot tube arm.
- Check the tension arm dimension periodically. This dimension must be maintained for correct operation of the safety valve.
- **Keep Selector Valve Spool clean and ensure it moves freely.** Lubricate Spool (i.e. WD-40) to prevent rusting.




**IMPORTANT**

**Maintain spring dimension to ensure proper operation of safety valve.**



## 1400 Pillow Block Bearings

### (1400 only)

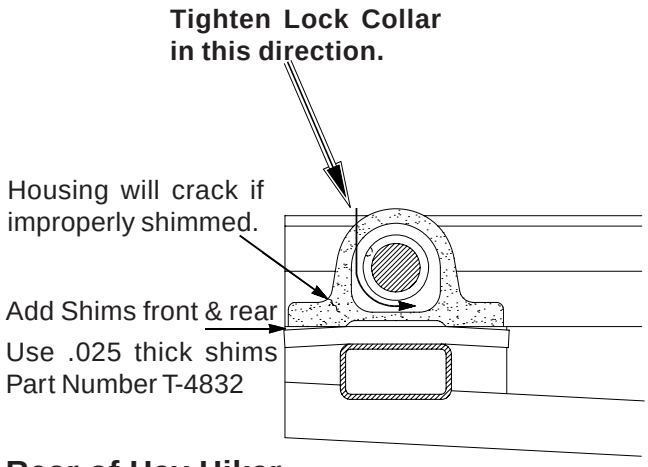
When replacing a pillow block bearing the following precautions must be taken.

- Carefully shim bearings to prevent flexing of housing lugs.

**Note: If improperly shimmed the housing will crack and fail causing severe damage to drive components.**

- **Do Not** use impact wrench to tighten bolts.
- Carefully tighten bolts to a **torque of 125 ft. lbs.**
- Secure locking collar properly. See illustration for correct direction to lock collar.

**Note: If the lock collar is improperly tightened the drive shaft may move causing severe damage to drive components.**




**Rear of Hay Hiker**

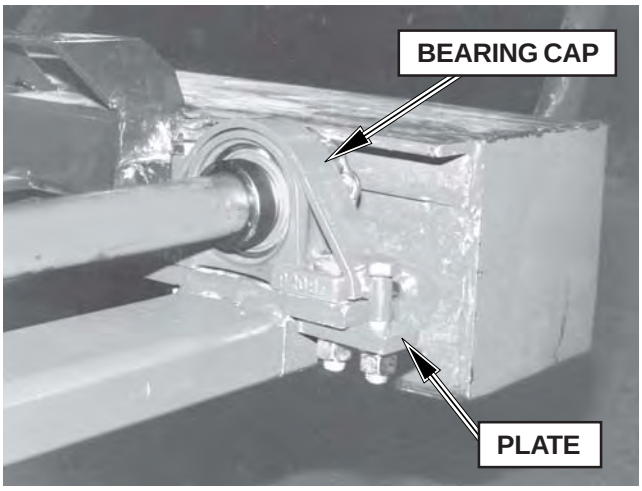
### Pillow Block Reinforcement Kit (K33560) for the 1400 Hay Hiker

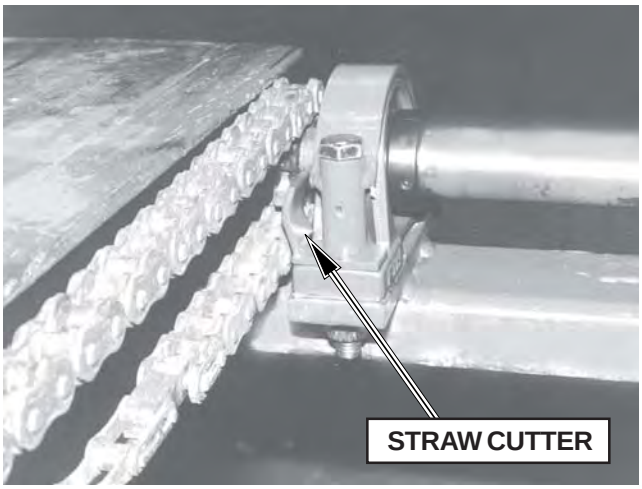
- Attach rear side of the Outer Bearings with a 5/8" x 2 3/4" bolt, 5/8" flatwasher, plate, 5/8" lockwasher and 5/8" nut.
- Secure Bearing Cap to plate with a 5/8" lockwasher and 5/8" nut.

**Note: Shim Bearings as required with 0.025" thick shims.**

- Attach front side of the Outer Bearings with a Straw Cutter, Bearing Cap and one - 5/8" x 4 1/2" bolt, 5/8" lockwasher and 5/8" nut.

**Note: The Straw Cutters run up against sprocket.**



## 1400 Bale Fork Bushings

### (1400 only)

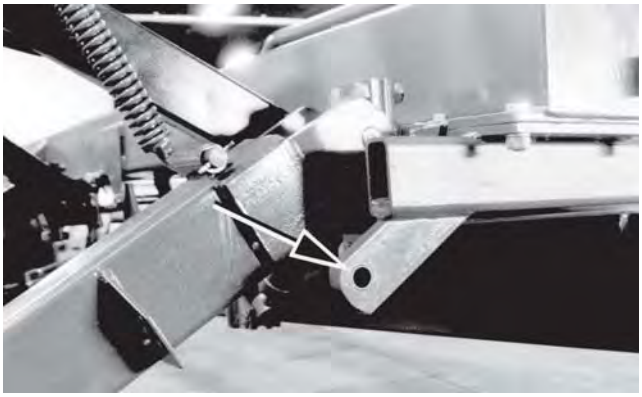
When replacing bushings the following precautions must be taken.

**Note: There are only three bushings required. They are located on the greasable pins.**

- Lower bale fork fully and securely block.
- Relieve pressure in hydraulic system.
- Remove cotter pins from cylinder pins.

**Note: Only do one cylinder at a time.**

- Remove cylinder pins.
- Press bushings out.
- Install new bushings with the bushing joint in area indicated by arrow.

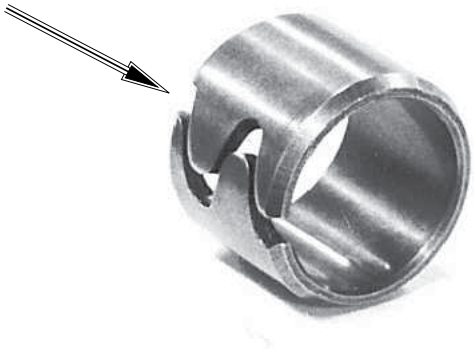


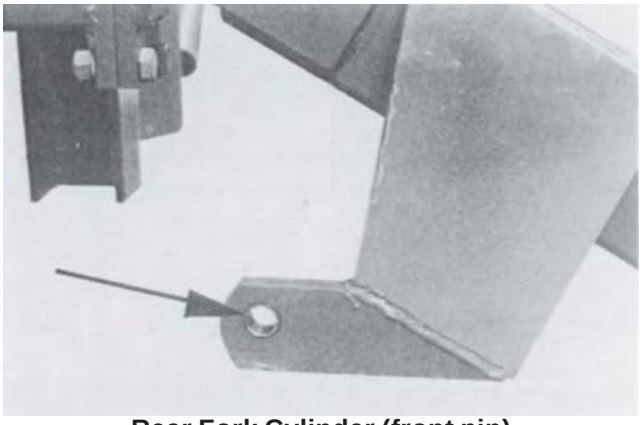
**Front Fork Cylinder (rear pin)**

**Rear Fork Cylinder (rear pin)**

# Important

**The bushing joint must be positioned in area indicated by arrow.**

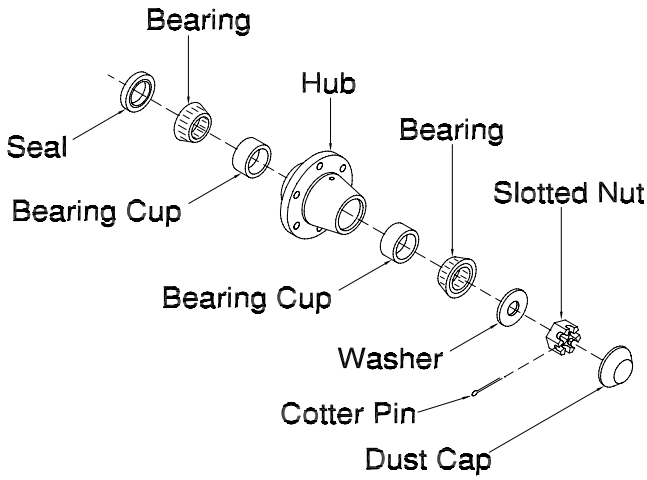




**Rear Fork Cylinder (front pin)**

## Wheel Bearings

- Shut tractor off and remove key.
- Block wheel on tractor.
- Raise the Hay Hiker wheels enough to clear the surface.
- Securely block Hay Hiker frame.
- Remove wheel from hub.
- Remove the dust cap, cotter pin, and the slotted nut and washer.
- Be careful when pulling the hub off as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups, replace parts as required.
- Do not reuse old seals. Use only new seals when assembling.
- Pack inner hub with bearing grease.
- Be sure bearing and cup are dry and clean.
- Work grease into the bearing rollers, until each part of the bearing is completely full of grease.
- Install inner bearing and cup first, then press new seals in place.
- Place hub on spindle.
- Install outer bearing, washer and slotted nut.
- Tighten nut while turning the wheel until a slight drag is felt.
- Back nut off one slot and install a cotter pin. Bend cotter pin up around nut.
- Pack grease inside the dust cap and tap into position.



**Notes**

# Section 7: Storage

## Section Contents

## Preparing for Storage

- To insure longer life and satisfactory operation, store the implement in a shed.
- If building storage is impossible, store away from areas of main activity on firm, dry ground.
- Clean machine thoroughly.
- Inspect all parts for wear or damage.
- Avoid delays - if parts are required, order at the end of the season.
- Lubricate grease fittings. (Refer to Lubricating Section).
- Lubricate chains. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).
- For a safer storage, lower the fork down and release the hydraulic pressure.
- If fork must be stored in a raised position, ensure that the fork is properly secured with lock pins.
- Level Hay Hiker using hitch jack and block up.
- Relieve pressure from hydraulic system.
- Raise main frame, block up and relieve weight from the tires.
- Cover tires with canvass to protect them from the elements when stored outside.
- Coat exposed cylinder shafts (Refer to "*Cylinder Shaft Protection*").
- Paint any surfaces that have become worn.

**Warning**

**Do not allow children to play on or around the machine.**

## PROAG PAINT

### Spray Cans:

| Part Number | Description |
|---|---|
| W-4647 | Red ProAG Spray Can |
| W-4648 | Blue ProAG Spray Can |
| N31087 | White ProAG Spray Can |

### Litre Cans:

| Part Number | Description |
|---|---|
| Z-10 | Red ProAG Paint/Litre |
| Z-11 | Blue ProAG Paint/Litre |

## Cylinder Shaft Protection

The steps summarized below should be followed when protecting chrome plated shafting on equipment:

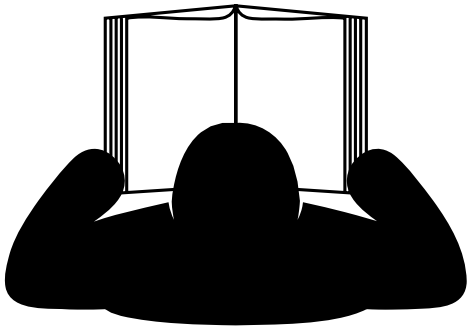
- Position the equipment as it will be stored, and identify all the exposed portions of the chrome plated shafts.
- Clean dirt and dust from the exposed portions of the shaft using a dry cloth or a cloth which has been dampened with an appropriate solvent.
- Prepare a mixture of 60% oil-based rust inhibitor and 40% Kerosene. Apply a thin coating of this mixture to the exposed surfaces of the chrome plated shaft. No. 1 fuel oil may be substituted for Kerosene. A cloth dipped in the mixture can be used to apply the coating.
- Inspect the shaft surfaces after six months and apply additional corrosion preventative mixture.
- If the equipment is to be moved and then stored again for an extended period of time, the steps above should be repeated for all shafts that were stroked during the move.
- **Before retracting the cylinders the protective coating should be removed.** This will prevent fine sand and dirt that has accumulated in the coating, from damaging the shaft seal. **Under no circumstances should sandpaper or other abrasive material be used to clean the surfaces.** Plastic or copper wool in combination with an appropriate solvent will remove most of the dirt.

**⚠ Caution**

**Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure.**

## Removing from Storage

- Review Operator's Manual.
- Check tire pressure (Refer to Tire Pressure List)
- Clean machine thoroughly. Remove coating from exposed cylinder shafts (Refer to Cylinder Shaft Maintenance).
- Lubricate grease fittings. (Refer to Lubricating Section).
- Lubricate chains. (Refer to Lubricating Section).
- Tighten all bolts to proper specifications (Refer to Bolt Torque Chart).



**Notes**

# Section 8: Troubleshooting

## Section Contents

# Troubleshooting

| Problem | Cause | Correction |
|---|---|---|
| First bale not rolling to far-side of bed. | Fork not being raised to full height. | Raise fork to full height |
| | Bale deflector not engaging (1400 only). | Adjust Bale Deflector cable (1400 only). |
| | Bale deflector bar too low (881 only). | Raise bale deflector to give bale more momentum (881 only). |
| | Turning to the left while loading bale (881 only). | Avoid left hand turns while bale is being loaded (881 only). |
| Bale rolling in at an angle. | Hay Hiker not level. | Level Hay Hiker. |
| | Bales are slightly cone shaped. | Load larger end of bale onto fork first. |
| | Forks are spaced too wide. | Move forks closer together. |
| | Bent Fork. | Straighten or replace fork. |
| Poor Push Bar operation. | Dirt binding chain on drive sprockets (1400 only). | Keep dirt and other debris from building up around rear drive sprockets (1400 only). |
| | Chain timing out. | Adjust pull chains to pull evenly on push bar. |
| | Chain is too loose. | Keep chains evenly tightened. |
| | Wear blocks may be worn or binding (881 only). | Replace (881 only). |
| | Rollers may be worn or binding (1400 only). | Replace (1400 only). |
| | Damaged links on pull chain. | Replace damaged links. |
| Push Bar does not move. | Line lock valves are both closed. | Relieve pressure in hydraulic system.<br>Use pliers or vice grip to extend poppet. Care must be taken not to damage poppet. |
| Push Bar striking pillow block bearings. | O-ring on cartridge on rear valve damaged. | Replace cartridge on rear depth stop valve. |
| | Air in hydraulic system. | Bleed air out of system. |
| Poor fork operation. | Push Bar. | Move push bar forward to switch selector valve. |

| Problem | Cause | Correction |
|---|---|---|
| Poor fork operation. | Selector valve not switching. | Adjust lever. Damaged valve shaft, replace. |
| | Air in hydraulic system. | Raise fork fully holding hydraulic lever for several seconds. |
| Fork will not stay in elevated position. (1400 only) | Fork cylinders located in wrong location. | Check hydraulic diagrams in Operation Section for proper cylinder locations. |
| | Air in hydraulic system. | Raise fork fully holding hydraulic lever for several seconds. |
| | Damaged seal. | See oil accumulation below. |
| Poor bed tilt operation. | Push Bar. | Move push bar back a few inches to switch selector valve. |
| | Selector Valve. | Move shaft to its outermost position. |
| | Selector valve. | Check position of lever when push bar is fully returned. |
| Bed rises when lowering fork. | Air in system. | Raise fork to full position and hold the hydraulic lever for several seconds to phase out air from system. |
| Push-bar stalls when 6 to 8 bales are loaded (1400 only) | The action of the chain tensioner arms contacting the cantilever has closed the safety valve slightly. With the reduced oil flow, the motor does not develop full torque causing it to stall. | Adjust chain tensioner spring. See 'Push Bar Chain Assembly' in Maintenance Section. |
| Drive Shaft moving (1400 only) | Lock collars loose. | Tighten lock collars in direction of rotation. See Maintenance Section. |
| Outer fork bending on bale fork. | Operator striking bale with outer fork. | Adjust fork to maximum width. Bales have flattened out and become to wide. |
| Oil accumulation | Normal. | Slight seepage from seal is normal. |
| | Damaged seal. | Replace seals. |

| Problem | Cause | Correction |
|---|---|---|
| Oil accumulation | Loose fittings. | Tighten hose and pipe connections. |
| | Scored cylinder shaft will damage shaft seal. | Replace shaft and shaft seal. |
| Left side lifting with first bale (881 only). | Bale too heavy. | Ballast left side of Hay Hiker (881 only). |

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